

पुरोहित पुरोहित पुरोहित
वनस्थली विद्यापीठ

श्रेणी संख्या.....

पुस्तक संख्या.....

आवृत्ति क्रमांक.....

THE
NAUTICAL ALMANAC
AND
ASTRONOMICAL EPHEMERIS
FOR THE YEAR
1928,
FOR THE MERIDIAN
OF THE
ROYAL OBSERVATORY AT GREENWICH
(WITH TWO INSET ECLIPSE MAPS)

PUBLISHED BY ORDER OF
THE LORDS COMMISSIONERS OF THE ADMIRALTY

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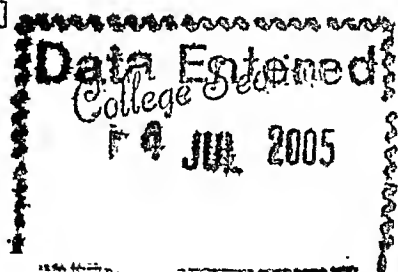
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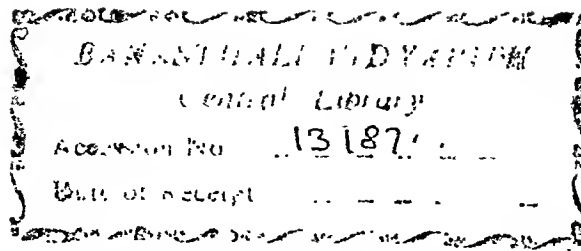
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MCMXXV





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ALPHABETICALLY ARRANGED.

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ECLIPSE MAPS.

To face page 448	Map of the Total Eclipse of the Sun, May 19, 1928.
To face page 453	Map of the Partial Eclipse of the Sun, November 12, 1928.

PREFACE.

THE contents and the arrangement of the NAUTICAL ALMANAC for the year 1928 are the same generally as those of the preceding year.

There is discontinuity in the places of stars. The Catalogue for 1925.0 by W. S. EICHELBERGER, *Astronomical Papers of the American Ephemeris and Nautical Almanac*, vol. x, part I, is now used.

Twilight is given for the first time.

The following sections have been supplied from abroad :—

Apparent Places of Polar Stars from Paris.

Apparent Places of Stars marked A. N. or A. E. at the foot of the column from San Fernando and Washington respectively.

Eclipses from Washington.

Elements of Occultations from Washington.

Jupiter's Fifth Satellite from Washington ; Jupiter's four principal Satellites from Paris ; Saturn's Satellites and Rings from Washington ; Satellites of Uranus and Neptune from Washington.

Physical Ephemerides of Sun, Moon (defective illumination excepted), Mercury, Venus, Mars, and Jupiter from Washington.

Tables of Sunrise, Sunset and Twilight, Moonrise and Moonset from Washington.

The places of the Sun are from NEWCOMB'S TABLES (*Astronomical Papers of the American Ephemeris and Nautical Almanac*, vol. vi, part I).

The places of the Moon are from BROWN'S *Tables of the Motion of the Moon*.

The heliocentric places of the planets are from the Tables in the *Astronomical Papers of the American Ephemeris and Nautical Almanac*.

PREFACE.

The names of stars, mean places, precessions, proper motions, magnitudes, and spectral types are from the Catalogue for 1925-0 by W. S. EICHELBERGER, *Astronomical Papers of the American Ephemeris and Nautical Almanac*, vol. x, part 1.

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Superintendent.

*H.M. Nautical Almanac Office,
Royal Naval College, Greenwich,
London, S.E.10.*

Nov. 1, 1925.

EXPLANATION OF ASTRONOMICAL SYMBOLS AND ABBREVIATIONS.

☉	The Sun.	♂	Mars.	♌	Conjunction.
☾	The Moon.	♃	Jupiter.	☐	Quadrature.
☿	Mercury.	♄	Saturn.	♌	Opposition.
♀	Venus.	♅	Uranus.	♊	Ascending Node.
⊕	The Earth.	♆	Neptune.	♋	Descending Node.

^h	Hours.	°	Degrees.	N.	North.	S.	South.
^m	Minutes of Time.		Minutes of Arc.	E.	East.	W.	West.
^s	Seconds of Time.	"	Seconds of Arc.				

SIGNS OF THE ZODIAC.

O. ♈	Aries	..	0°	IV. ♌	Leo	..	120°	VIII. ♐	Sagittarius	240°
I. ♉	Taurus	..	30	V. ♍	Virgo	..	150	IX. ♑	Capricornus	270
II. ♊	Gemini	..	60	VI. ♎	Libra	..	180	X. ♒	Aquarius	300
III. ♋	Cancer	..	90	VII. ♏	Scorpio	..	210	XI. ♓	Pisces	330

PRINCIPAL ARTICLES OF THE CALENDAR,
For the Year 1928.

Golden Number	10	||	Dominical Letters	A, G
Epact	8	||	Julian Period (Year of)	6641

FIXED AND MOVABLE FESTIVALS, ANNIVERSARIES,
&c., &c.

Epiphany	Jan. 6	||	<i>Rogation Sunday</i>	May 13
<i>Septuagesima Sunday</i>	Feb. 5	||	<i>Ascension Day—Holy Thursday</i>	17
<i>Quinquagesima—Shrove Sunday</i>	19	||	Birthday of Queen Mary ..	26
<i>Ash Wednesday</i>	22	||	<i>Whit Sunday</i>	27
<i>Quadragesima—1st Sun. in Lent</i>	26	||	Birthday of King George V. ..	June 3
St. David	Mar. 1	||	<i>Trinity Sunday</i>	3
St. Patrick	17	||	<i>Corpus Christi</i>	7
Annunciation—Lady Day ..	25	||	Birthday of the Prince of Wales..	23
<i>Palm Sunday</i>	April 1	||	St. John Bapt.—Midsum. Day ..	24
<i>Good Friday</i>	6	||	St. Michael—Michaelmas Day ..	Sept. 29
EASTER DAY	8	||	St. Andrew	Nov. 30
<i>Low Sunday</i>	15	||	Birthday of Queen Alexandra ..	Dec. 1
St. George	23	||	<i>1st Sunday in Advent</i>	2
Accession of King George V. ..	May 6	||	St. Thomas	21
Proclamation of King George V.	9	||	Christmas Day	25

The Year 5689 of the Jewish Era begins on September 15.

The Year 1347 of the Mohammedan Era begins on June 20.

Ramā-lân (Month of Abstinence observed by the Turks) begins on February 22.

ERRATA

(Continued from p. ix of the *Nautical Almanac* for 1927).

NAUTICAL ALMANAC FOR THE YEAR 1917.

Appendix Page 70A (under date July 21, 1937)

For 28^h 99 read 27^h 99.

NAUTICAL ALMANAC FOR THE YEAR 1926.

Page 499 (Dec. 19. Disappearance of μ Geminorum)

Read 00^h 29^m, 18^h 39^m, 53^o, 94^o.

NAUTICAL ALMANAC FOR THE YEAR 1927.

Page 200 (R.A. 01^h 20^m)

For β Ceti read θ Ceti.

Page 380 (ζ Ophiuchi, Sec δ)

For 0.017 read 1.017.

Page 569 (Foot-note)

Substitute the foot-note of page 568.

NAUTICAL ALMANAC FOR THE YEAR 1928.

Page 11 (Jan. 24^d 08^h Var. in 10^m of Declination)

For 90^h 04^m read 100^h 04^m.

NAUTICAL ALMANAC FOR THE YEAR 1929.

Page 35 (March 24, 18^h)

Increase Moon's declination by +0.5 and alter adjacent declinations and variations accordingly.

1928.

Moon Moon.	Nutation in R.A. (in time).	THE SUN'S			THE MOON'S		
		Horizontal Parallax.	Aberration.	Mean Longitude.	Mean Longitude.	Mean Longitude Ascending Node.	Mean Longitude Perigee.
	S	"	"	°	°	°	°
Jan. 1	-1.00	8.95	20.82	279.9120	25.4461	77.6237	33.6583
11	-0.97	8.95	20.82	289.7685	157.2101	77.0941	34.7723
21	-0.95	8.94	20.80	299.6249	288.9740	76.5646	35.8864
31	-0.93	8.93	20.78	309.4814	60.7380	76.0351	37.0004
Feb. 10	-0.93	8.92	20.74	319.3379	192.5020	75.5055	38.1144
20	-0.94	8.90	20.70	329.1944	324.2659	74.9760	39.2285
Mar. 1	-0.95	8.88	20.65	339.0508	96.0299	74.4464	40.3425
11	-0.97	8.86	20.60	348.9073	227.7939	73.9169	41.4565
21	-1.00	8.83	20.54	358.7638	359.5578	73.3874	42.5706
31	-1.02	8.81	20.48	8.6203	131.3218	72.8578	43.6846
Apr. 10	-1.04	8.78	20.42	18.4767	263.0858	72.3283	44.7987
20	-1.05	8.76	20.37	28.3332	34.8497	71.7987	45.9127
30	-1.06	8.73	20.31	38.1897	166.6137	71.2692	47.0267
May 10	-1.06	8.71	20.27	48.0462	298.3777	70.7397	48.1408
20	-1.04	8.69	20.22	57.9026	70.1416	70.2101	49.2548
30	-1.03	8.68	20.19	67.7591	201.9056	69.6806	50.3689
June 9	-1.00	8.67	20.16	77.6156	333.6696	69.1511	51.4829
19	-0.98	8.66	20.14	87.4720	105.4336	68.6215	52.5969
29	-0.95	8.66	20.13	97.3285	237.1975	68.0920	53.7110
July 9	-0.92	8.66	20.13	107.1850	8.9615	67.5624	54.8250
19	-0.90	8.66	20.14	117.0415	140.7255	67.0329	55.9391
29	-0.89	8.67	20.16	126.8979	272.4894	66.5034	57.0531
Aug. 8	-0.88	8.68	20.19	136.7544	44.2534	65.9738	58.1671
18	-0.88	8.70	20.23	146.6109	176.0174	65.4443	59.2812
28	-0.89	8.71	20.27	156.4674	307.7813	64.9147	60.3952
Sept. 7	-0.91	8.74	20.32	166.3238	79.5453	64.3852	61.5093
17	-0.93	8.76	20.37	176.1803	211.3093	63.8557	62.6233
27	-0.95	8.78	20.43	186.0368	343.0732	63.3261	63.7373
Oct. 7	-0.97	8.81	20.49	195.8933	114.8372	62.7966	64.8514
17	-0.99	8.83	20.55	205.7497	246.6012	62.2670	65.9654
27	-1.00	8.86	20.61	215.6062	18.3651	61.7375	67.0795
Nov. 6	-1.00	8.88	20.66	225.4627	150.1291	61.2080	68.1935
16	-0.99	8.90	20.71	235.3191	281.8931	60.6784	69.3075
26	-0.97	8.92	20.75	245.1756	53.6570	60.1489	70.4216
Dec 6	-0.94	8.93	20.78	255.0321	185.4210	59.6194	71.5356
16	-0.91	8.94	20.80	264.8886	317.1850	59.0898	72.6496
26	-0.88	8.95	20.82	274.7450	83.9489	58.5603	73.7637
36	-0.84	8.95	20.82	284.6015	220.7129	58.0307	74.8777

Mean Obliquity, 1928.0..	23 26 55.14	Daily Motion.			
Precession for the Year 1928	.. 50.2627	+	+	-	+
Precession for 1 Day	.. .. 00.1376	0° 98565	13° 17640	0° 05295	0° 11140

(12961)

(NAUTICAL ALMANAC, 1928.)

B

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semi-diameter passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Var. in 1 hour.
		Apparent Right Ascension.	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.			
		h m s	s	° ' "	"	m s	m s	s
Sun.	1	18 42 50.01	11.053	S. 23 05 02.0	11.31	1 11.06	3 12.96	1.193
Mon.	2	18 47 15.11	11.039	23 00 16.7	12.46	1 11.02	3 41.43	1.179
Tues.	3	18 51 39.86	11.024	22 55 03.9	13.60	1 10.97	4 9.55	1.164
Wed.	4	18 56 04.25	11.008	22 49 23.7	14.74	1 10.92	4 37.29	1.148
Thur.	5	19 00 28.23	10.991	22 43 16.3	15.87	1 10.87	5 04.64	1.131
Frid.	6	19 04 51.79	10.972	22 36 41.9	16.99	1 10.81	5 31.57	1.113
Sat.	7	19 09 14.90	10.953	22 29 40.7	18.11	1 10.75	5 58.05	1.094
Sun.	8	19 13 37.54	10.933	22 22 12.9	19.21	1 10.68	6 24.06	1.074
Mon.	9	19 17 59.69	10.912	22 14 18.6	20.31	1 10.61	6 49.59	1.053
Tues.	10	19 22 21.33	10.891	22 05 58.2	21.39	1 10.54	7 14.60	1.031
Wed.	11	19 26 42.43	10.868	21 57 11.9	22.47	1 10.47	7 39.07	1.008
Thur.	12	19 31 02.97	10.844	21 47 59.9	23.53	1 10.39	8 02.99	0.985
Frid.	13	19 35 22.94	10.820	21 38 22.4	24.59	1 10.30	8 26.34	0.960
Sat.	14	19 39 42.31	10.794	21 28 19.8	25.63	1 10.22	8 49.09	0.935
Sun.	15	19 44 01.05	10.768	21 17 52.3	26.66	1 10.13	9 11.21	0.909
Mon.	16	19 48 19.16	10.741	21 07 00.3	27.68	1 10.04	9 32.70	0.882
Tues.	17	19 52 36.61	10.713	20 55 43.9	28.68	1 09.94	9 53.54	0.854
Wed.	18	19 56 53.37	10.684	20 44 03.5	29.68	1 09.85	10 13.69	0.825
Thur.	19	20 01 09.44	10.655	20 31 59.5	30.66	1 09.75	10 33.15	0.796
Frid.	20	20 05 24.80	10.625	20 19 32.1	31.62	1 09.65	10 51.89	0.766
Sat.	21	20 09 39.42	10.594	20 06 41.7	32.57	1 09.55	11 09.91	0.735
Sun.	22	20 13 53.29	10.562	19 53 28.7	33.51	1 09.44	11 27.18	0.704
Mon.	23	20 18 06.40	10.530	19 39 53.4	34.43	1 09.33	11 43.68	0.672
Tues.	24	20 22 18.72	10.497	19 25 56.2	35.34	1 09.23	11 59.41	0.639
Wed.	25	20 26 30.26	10.464	19 11 37.5	36.22	1 09.12	12 14.34	0.606
Thur.	26	20 30 40.98	10.430	18 56 57.6	37.10	1 09.01	12 28.47	0.572
Frid.	27	20 34 50.88	10.395	18 41 57.0	37.95	1 08.90	12 41.78	0.537
Sat.	28	20 38 59.96	10.361	18 26 36.0	38.79	1 08.78	12 54.27	0.503
Sun.	29	20 43 08.20	10.326	18 10 55.0	39.62	1 08.67	13 05.92	0.468
Mon.	30	20 47 15.60	10.291	17 54 54.5	40.42	1 08.56	13 16.74	0.433
Tues.	31	20 51 22.16	10.256	17 38 34.9	41.21	1 08.44	13 26.72	0.398
Wed.	32	20 55 27.88	10.221	S. 17 21 56.6	41.98	1 08.33	13 35.85	0.363

* Mean Time of the Semidiameter passing may be found by subtracting 0.19 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*		
		h m s	° ' "	' "	m s	h m s
Sun.	1	18 42 49.42	S. 23 05 02.6	16 17.54	3 12.90	18 39 36.52
Mon.	2	18 47 14.43	23 00 17.5	16 17.55	3 41.35	18 43 33.08
Tues.	3	18 51 39.10	22 55 04.8	16 17.56	4 09.47	18 47 29.64
Wed.	4	18 56 03.40	22 49 24.8	16 17.56	4 37.21	18 51 26.19
Thur.	5	19 00 27.30	22 43 17.6	16 17.55	5 04.55	18 55 22.75
Frid.	6	19 04 50.78	22 36 43.5	16 17.54	5 31.47	18 59 19.31
Sat.	7	19 09 13.81	22 29 42.5	16 17.52	5 57.94	19 03 15.87
Sun.	8	19 13 36.37	22 22 14.9	16 17.50	6 23.95	19 07 12.42
Mon.	9	19 17 58.45	22 14 20.9	16 17.47	6 49.47	19 11 08.98
Tues.	10	19 22 20.01	22 06 00.8	16 17.43	7 14.47	19 15 05.54
Wed.	11	19 26 41.04	21 57 14.8	16 17.39	7 38.94	19 19 02.10
Thur.	12	19 31 01.52	21 48 03.0	16 17.34	8 02.86	19 22 58.66
Frid.	13	19 35 21.42	21 38 25.9	16 17.29	8 26.20	19 26 55.22
Sat.	14	19 39 40.72	21 28 23.6	16 17.23	8 48.95	19 30 51.77
Sun.	15	19 43 59.41	21 17 56.4	16 17.16	9 11.07	19 34 48.33
Mon.	16	19 48 17.45	21 07 04.7	16 17.09	9 32.56	19 38 44.89
Tues.	17	19 52 34.84	20 55 48.6	16 17.02	9 53.39	19 42 41.44
Wed.	18	19 56 51.55	20 44 08.6	16 16.94	10 13.55	19 46 38.00
Thur.	19	20 01 07.57	20 32 04.9	16 16.86	10 33.01	19 50 34.56
Frid.	20	20 05 22.87	20 19 37.8	16 16.77	10 51.76	19 54 31.12
Sat.	21	20 09 37.45	20 06 47.8	16 16.68	11 09.77	19 58 27.67
Sun.	22	20 13 51.28	19 53 35.1	16 16.59	11 27.05	20 02 24.23
Mon.	23	20 18 04.34	19 40 00.2	16 16.49	11 43.55	20 06 20.79
Tues.	24	20 22 16.63	19 26 03.3	16 16.39	11 59.28	20 10 17.34
Wed.	25	20 26 28.12	19 11 44.9	16 16.29	12 14.22	20 14 13.90
Thur.	26	20 30 38.81	18 57 05.3	16 16.18	12 28.35	20 18 10.46
Frid.	27	20 34 48.68	18 42 05.0	16 16.07	12 41.67	20 22 07.02
Sat.	28	20 38 57.73	18 26 44.3	16 15.96	12 54.16	20 26 03.57
Sun.	29	20 43 05.95	18 11 03.7	16 15.84	13 05.82	20 30 00.13
Mon.	30	20 47 13.33	17 55 03.5	16 15.72	13 16.64	20 33 56.68
Tues.	31	20 51 19.87	17 38 44.1	16 15.59	13 26.63	20 37 53.24
Wed.	32	20 55 25.57	S. 17 22 06.1	16 15.46	13 35.77	20 41 49.80

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
	12h.	12h.			0h.	12h.	0h.	12h.
	° ' "	"		h m s	' "	' "	' "	' "
1	279 50 23.2	S. 0.24	9.9926722	17 19 30.99	16 07.80	16 10.52	59 11.97	59 21.96
2	280 51 32.3	0.16	.9926662	17 15 35.08	16 12.90	16 14.87	59 30.70	59 37.92
3	281 52 41.1	S. 0.05	.9926627	17 11 39.17	16 16.35	16 17.26	59 43.35	59 46.69
4	282 53 49.7	N. 0.08	9.9926619	17 07 43.26	16 17.53	16 17.10	59 47.68	59 46.11
5	283 54 58.0	0.21	.9926639	17 03 47.35	16 15.93	16 13.99	59 41.81	59 34.69
6	284 56 06.2	0.34	.9926688	16 59 51.43	16 11.28	16 07.83	59 24.74	59 12.06
7	285 57 14.1	0.46	9.9926766	16 55 55.52	16 03.68	15 58.90	58 56.83	58 39.31
8	286 58 22.0	0.56	.9926873	16 51 59.61	15 53.60	15 47.88	58 19.84	57 58.84
9	287 59 29.7	0.64	.9927009	16 48 03.70	15 41.86	15 35.66	57 36.74	57 14.01
10	289 00 37.4	0.69	9.9927172	16 44 07.78	15 29.43	15 23.27	56 51.12	56 28.52
11	290 01 44.9	0.72	.9927363	16 40 11.87	15 17.32	15 11.67	56 06.66	55 45.93
12	291 02 52.4	0.71	.9927579	16 36 15.96	15 06.43	15 01.67	55 26.69	55 09.24
13	292 03 59.8	0.68	9.9927820	16 32 20.05	14 57.48	14 53.90	54 53.85	54 40.73
14	293 05 07.0	0.63	.9928085	16 28 24.14	14 50.99	14 48.78	54 30.05	54 21.92
15	294 06 14.2	0.55	.9928372	16 24 28.23	14 47.28	14 46.51	54 16.42	54 13.59
16	295 07 21.1	0.45	9.9928680	16 20 32.31	14 46.46	14 47.12	54 13.41	54 15.84
17	296 08 27.7	0.33	.9929009	16 16 36.40	14 48.47	14 50.48	54 20.80	54 28.16
18	297 09 34.1	0.20	.9929357	16 12 40.49	14 53.10	14 56.27	54 37.77	54 49.44
19	298 10 40.1	N. 0.06	9.9929723	16 08 44.58	14 59.95	15 04.06	55 02.93	55 18.01
20	299 11 45.7	S. 0.07	.9930107	16 04 48.67	15 08.52	15 13.26	55 34.39	55 51.77
21	300 12 50.8	0.20	.9930507	16 00 52.76	15 18.17	15 23.19	56 09.82	56 28.23
22	301 13 55.3	0.32	9.9930923	15 56 56.85	15 28.21	15 33.16	56 46.67	57 04.81
23	302 14 59.0	0.42	.9931354	15 53 00.93	15 37.94	15 42.49	57 22.36	57 39.06
24	303 16 02.0	0.49	.9931799	15 49 05.02	15 46.74	15 50.65	57 54.68	58 09.02
25	304 17 04.1	0.54	9.9932260	15 45 09.11	15 54.17	15 57.29	58 21.95	58 33.39
26	305 18 05.3	0.55	.9932736	15 41 13.20	15 59.99	16 02.27	58 43.29	58 51.66
27	306 19 05.3	0.53	.9933228	15 37 17.29	16 04.14	16 05.62	58 58.53	59 03.98
28	307 20 04.1	0.48	9.9933737	15 33 21.38	16 06.74	16 07.51	59 08.08	59 10.90
29	308 21 01.8	0.39	.9934265	15 29 25.47	16 07.95	16 08.09	59 12.53	59 13.03
30	309 21 58.2	0.29	.9934812	15 25 29.56	16 07.92	16 07.47	59 12.43	59 10.75
31	310 22 53.2	0.18	.9935381	15 21 33.65	16 06.71	16 05.66	59 07.98	59 04.10
32	311 23 47.0	S. 0.05	9.9935971	15 17 37.74	16 04.28	16 02.57	58 59.05	58 52.77

MEAN TIME.

Day of the Month.	THE MOON'S							
	Longitude.		Latitude.		Age.	Meridian Passage.		
	oh.	12h.	oh.	12h.	oh.	Upper.	Lower.	
	° ' "	° ' "	° ' "	° ' "	d	h m	h m	
1	16 13 24.1	23 19 10.7	S. 4 39 34.6	S. 4 19 24.3	7.82	19 07.4	06 42.6	
2	30 26 58.1	37 36 29.7	3 55 08.1	3 27 06.1	8.82	19 58.8	07 32.8	
3	44 47 25.3	51 59 21.4	2 55 43.4	2 21 29.6	9.82	20 53.0	08 25.5	
4	59 11 50.9	66 24 23.1	1 44 58.6	S. 1 06 47.6	10.82	21 50.6	09 21.4	
5	73 36 24.5	80 47 19.2	S. 0 27 36.5	N. 0 11 53.4	11.82	22 50.8	10 20.5	
6	87 56 30.1	95 03 19.2	N. 0 51 00.8	1 29 05.4	12.82	23 51.9	11 21.4	
7	102 07 09.9	109 07 27.3	2 05 29.8	2 39 39.6	13.82	* *	12 22.1	
8	116 03 40.1	122 55 21.3	3 11 05.1	3 39 21.8	14.82	00 51.6	13 20.3	
9	129 42 09.3	136 23 48.5	4 04 10.2	4 25 16.1	15.82	01 48.0	14 14.6	
10	143 00 09.8	149 31 10.5	4 42 30.7	4 55 49.4	16.82	02 40.1	15 04.6	
11	155 56 54.7	162 17 32.6	5 05 11.8	5 10 40.4	17.82	03 28.1	15 50.7	
12	168 33 20.1	174 44 38.4	5 12 20.7	5 10 20.0	18.82	04 12.5	16 33.8	
13	180 51 53.0	186 55.33.7	5 04 47.1	4 55 52.1	19.82	04 54.5	17 15.0	
14	192 56 12.9	198 54 25.9	4 43 45.5	4 28 38.4	20.82	05 35.2	17 55.4	
15	204 50 49.6	210 46 02.2	4 10 42.2	3 50 08.4	21.82	06 15.7	18 36.2	
16	216 40 42.5	222 35 29.4	3 27 09.2	3 01 57.0	22.82	06 57.0	19 18.2	
17	228 31 01.3	234 27 55.5	2 34 44.8	2 05 46.4	23.82	07 40.1	20 02.5	
18	240 26 47.8	246 28 11.9	1 35 16.8	N. 1 03 32.1	24.82	08 25.7	20 49.7	
19	252 32 38.8	258 40 36.4	N. 0 30 49.8	S. 0 02 30.8	25.82	09 14.5	21 40.1	
20	264 52 28.6	271 08 35.3	S. 0 36 08.6	1 09 40.7	26.82	10 06.5	22 33.4	
21	277 29 11.1	283 54.25.6	1 42 42.5	2 14 47.9	27.82	11 00.8	23 28.5	
22	290 24 23.0	296 59 01.5	2 45 29.3	3 14 18.7	28.82	11 56.3	* *	
23	303 38 13.8	310 21 47.0	3 40 47.6	4 04 28.5	0.15	12 51.5	00 24.0	
24	317 09 23.2	324 00 40.3	4 24 55.1	4 41 43.6	1.15	13 45.3	01 18.6	
25	330 55 12.9	337 52 33.0	4 54 33.0	5 03 06.5	2.15	14 37.0	02 11.4	
26	344 52 11.6	351 53 39.8	5 07 11.6	5 06 40.7	3.15	15 27.1	03 02.2	
27	358 56 29.7	6 00 15.3	5 01 31.4	4 51 46.5	4.15	16 16.0	03 51.6	
28	13 04 33.4	20 09 04.1	4 37 33.8	4 19 06.2	5.15	17 05.0	04 40.4	
29	27 13 30.4	34 17 38.5	3 56 41.0	3 30 39.4	6.15	17 55.0	05 29.8	
30	41 21 17.6	48 24 18.8	3 01 26.4	2 29.29.9	7.15	18 47.2	06 20.8	
31	55 26 34.6	62 27 58.2	1 55 20.7	1 19 31.2	8.15	19 42.0	07 14.2	
32	69 28 22.4	76 27 39.3	S. 0 42 35.7	S. 0 05 09.1	9.15	20 39.6	08 10.5	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Sunday 1.					Tuesday 3.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	01 06 56.88	21.360	N. 2 04 45.2	148.75	00	02 52 50.55	23.013	N. 13 28 48.9	130.53
01	01 09 05.09	21.378	2 19 37.6	148.71	01	02 55 08.77	23.061	13 41 49.8	129.76
02	01 11 13.42	21.398	2 34 29.7	148.66	02	02 57 27.28	23.110	13 54 46.0	128.98
03	01 13 21.86	21.417	2 49 21.5	148.59	03	02 59 46.09	23.159	14 07 37.6	128.19
04	01 15 30.42	21.437	3 04 12.8	148.51	04	03 02 05.19	23.208	14 20 24.3	127.38
05	01 17 39.10	21.458	3 19 03.6	148.42	05	03 04 24.59	23.258	14 33 06.2	126.57
06	01 19 47.91	21.480	3 33 53.8	148.31	06	03 06 44.29	23.309	14 45 43.1	125.72
07	01 21 56.86	21.503	3 48 43.3	148.19	07	03 09 04.30	23.359	14 58 14.8	124.86
08	01 24 05.94	21.525	4 03 32.1	148.06	08	03 11 24.60	23.409	15 10 41.4	123.99
09	01 26 15.16	21.550	4 18 20.0	147.90	09	03 13 45.21	23.461	15 23 02.7	123.10
10	01 28 24.54	21.575	4 33 06.9	147.74	10	03 16 06.13	23.512	15 35 18.6	122.19
11	01 30 34.06	21.600	4 47 52.9	147.57	11	03 18 27.35	23.563	15 47 29.0	121.28
12	01 32 43.74	21.627	5 02 37.7	147.37	12	03 20 48.89	23.615	15 59 33.9	120.34
13	01 34 53.58	21.653	5 17 21.3	147.17	13	03 23 10.73	23.667	16 11 33.1	119.38
14	01 37 03.58	21.681	5 32 03.7	146.95	14	03 25 32.89	23.718	16 23 26.5	118.42
15	01 39 13.75	21.710	5 46 44.7	146.72	15	03 27 55.35	23.770	16 35 14.1	117.43
16	01 41 24.10	21.739	6 01 24.3	146.48	16	03 30 18.13	23.823	16 46 55.6	116.42
17	01 43 34.62	21.769	6 16 02.4	146.21	17	03 32 41.23	23.875	16 58 31.1	115.41
18	01 45 45.33	21.800	6 30 38.8	145.93	18	03 35 04.63	23.927	17 10 00.5	114.37
19	01 47 56.22	21.831	6 45 13.5	145.63	19	03 37 28.35	23.979	17 21 23.5	113.31
20	01 50 07.30	21.863	6 59 46.3	145.32	20	03 39 52.38	24.031	17 32 40.2	112.24
21	01 52 18.57	21.895	7 14 17.3	145.01	21	03 42 16.72	24.083	17 43 50.4	111.16
22	01 54 30.04	21.929	7 28 46.4	144.68	22	03 44 41.37	24.135	17 54 54.1	110.07
23	01 56 41.72	21.964	N. 7 43 13.4	144.32	23	03 47 06.34	24.188	N. 18 05 51.2	108.95
Monday 2.					Wednesday 4.				
00	01 58 53.61	21.998	N. 7 57 38.2	143.95	00	03 49 31.62	24.239	N. 18 16 41.5	107.82
01	02 01 05.70	22.033	8 12 00.8	143.57	01	03 51 57.21	24.291	18 27 25.0	106.67
02	02 03 18.01	22.070	8 26 21.0	143.18	02	03 54 23.11	24.343	18 38 01.5	105.50
03	02 05 30.54	22.107	8 40 38.9	142.77	03	03 56 49.32	24.394	18 48 31.0	104.33
04	02 07 43.29	22.144	8 54 54.2	142.33	04	03 59 15.84	24.445	18 58 53.4	103.13
05	02 09 56.27	22.182	9 09 06.9	141.89	05	04 01 42.66	24.496	19 09 08.6	101.92
06	02 12 09.47	22.220	9 23 16.9	141.43	06	04 04 09.79	24.547	19 19 16.4	100.69
07	02 14 22.91	22.260	9 37 24.1	140.96	07	04 06 37.22	24.597	19 29 16.9	99.46
08	02 16 36.50	22.300	9 51 28.4	140.48	08	04 09 04.95	24.647	19 39 09.9	98.20
09	02 18 50.51	22.341	10 05 29.8	139.98	09	04 11 32.98	24.696	19 48 55.3	96.93
10	02 21 04.68	22.382	10 19 28.1	139.45	10	04 14 01.30	24.745	19 58 33.0	95.64
11	02 23 19.09	22.423	10 33 23.2	138.92	11	04 16 29.92	24.795	20 08 03.0	94.35
12	02 25 33.76	22.466	10 47 15.1	138.37	12	04 18 58.84	24.844	20 17 25.2	93.04
13	02 27 48.68	22.508	11 01 03.6	137.80	13	04 21 28.05	24.892	20 26 39.5	91.71
14	02 30 03.86	22.552	11 14 48.7	137.22	14	04 23 57.54	24.938	20 35 45.7	90.36
15	02 32 19.30	22.596	11 28 30.2	136.62	15	04 26 27.31	24.986	20 44 43.8	89.00
16	02 34 35.01	22.641	11 42 08.1	136.01	16	04 28 57.37	25.033	20 53 33.7	87.63
17	02 36 50.09	22.685	11 55 42.3	135.38	17	04 31 27.70	25.078	21 02 15.4	86.25
18	02 39 07.27	22.730	12 09 12.6	134.73	18	04 33 58.30	25.123	21 10 48.7	84.85
19	02 41 23.75	22.776	12 22 39.0	134.07	19	04 36 29.17	25.167	21 19 13.6	83.44
20	02 43 40.54	22.823	12 36 01.4	133.39	20	04 39 00.30	25.210	21 27 30.0	82.02
21	02 45 57.62	22.870	12 49 19.7	132.70	21	04 41 31.69	25.253	21 35 37.8	80.58
22	02 48 14.98	22.917	13 02 33.8	131.98	22	04 44 03.34	25.297	21 43 36.9	79.13
23	02 50 32.62	22.964	13 15 43.5	131.26	23	04 46 35.25	25.338	21 51 27.3	77.67
24	02 52 50.55	23.013	N. 13 28 48.9	130.53	24	04 49 07.40	25.378	N. 21 59 08.9	76.19

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 5.					Saturday 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	04 49 07.40	25.378	N. 21 59 08.9	76.19	00	06 53 31.94	25.946	N. 24 58 45.0	03.05
01	04 51 39.79	25.419	22 06 41.6	74.71	01	06 56 07.55	25.923	24 58 21.6	04.73
02	04 54 12.43	25.458	22 14 05.4	73.22	02	06 58 43.02	25.899	24 57 48.2	06.41
03	04 56 45.29	25.496	22 21 20.2	71.70	03	07 01 18.34	25.873	24 57 04.7	08.09
04	04 59 18.38	25.533	22 28 25.8	70.18	04	07 03 53.50	25.846	24 56 11.1	09.76
05	05 01 51.69	25.570	22 35 22.3	68.64	05	07 06 28.49	25.818	24 55 07.6	11.42
06	05 04 25.22	25.605	22 42 09.5	67.10	06	07 09 03.31	25.788	24 53 54.1	13.08
07	05 06 58.95	25.639	22 48 47.5	65.55	07	07 11 37.95	25.757	24 52 30.7	14.73
08	05 09 32.89	25.673	22 55 16.1	63.98	08	07 14 12.40	25.724	24 50 57.4	16.37
09	05 12 07.03	25.705	23 01 35.3	62.42	09	07 16 46.64	25.690	24 49 14.3	18.00
10	05 14 41.35	25.737	23 07 45.1	60.83	10	07 19 20.68	25.656	24 47 21.4	19.63
11	05 17 15.87	25.768	23 13 45.3	59.24	11	07 21 54.51	25.619	24 45 18.7	21.26
12	05 19 50.56	25.796	23 19 36.0	57.64	12	07 24 28.11	25.581	24 43 06.3	22.87
13	05 22 25.42	25.824	23 25 17.0	56.03	13	07 27 01.48	25.543	24 40 44.3	24.47
14	05 25 00.45	25.851	23 30 48.4	54.42	14	07 29 34.62	25.502	24 38 12.7	26.07
15	05 27 35.63	25.876	23 36 10.0	52.78	15	07 32 07.50	25.460	24 35 31.5	27.66
16	05 30 10.96	25.901	23 41 21.8	51.15	16	07 34 40.14	25.418	24 32 40.8	29.24
17	05 32 46.44	25.923	23 46 23.8	49.51	17	07 37 12.51	25.373	24 29 40.6	30.81
18	05 35 22.04	25.945	23 51 15.9	47.86	18	07 39 44.62	25.329	24 26 31.1	32.36
19	05 37 57.78	25.966	23 55 58.1	46.21	19	07 42 16.46	25.283	24 23 12.3	33.90
20	05 40 33.63	25.985	24 00 30.4	44.55	20	07 44 48.01	25.235	24 19 44.3	35.44
21	05 43 09.60	26.003	24 04 52.7	42.88	21	07 47 19.28	25.188	24 16 07.0	36.98
22	05 45 45.67	26.019	24 09 05.0	41.22	22	07 49 50.26	25.138	24 12 20.6	38.49
23	05 48 21.83	26.035	N. 24 13 07.3	39.53	23	07 52 20.94	25.088	N. 24 08 25.1	40.00
Friday 6.					Sunday 8.				
00	05 50 58.09	26.049	N. 24 16 59.4	37.84	00	07 54 51.31	25.036	N. 24 04 20.6	41.49
01	05 53 34.42	26.062	24 20 41.4	36.16	01	07 57 21.37	24.983	24 00 07.2	42.98
02	05 56 10.83	26.073	24 24 13.3	34.47	02	07 59 51.11	24.930	23 55 44.9	44.45
03	05 58 47.29	26.082	24 27 35.0	32.78	03	08 02 20.53	24.876	23 51 13.8	45.91
04	06 01 23.81	26.091	24 30 46.6	31.08	04	08 04 49.62	24.820	23 46 34.0	47.36
05	06 04 00.38	26.098	24 33 47.9	29.37	05	08 07 18.37	24.764	23 41 45.5	48.79
06	06 06 36.98	26.102	24 36 39.0	27.67	06	08 09 46.79	24.708	23 36 48.5	50.21
07	06 09 13.60	26.106	24 39 19.9	25.96	07	08 12 14.87	24.651	23 31 43.0	51.62
08	06 11 50.25	26.109	24 41 50.5	24.25	08	08 14 42.60	24.593	23 26 29.1	53.02
09	06 14 26.91	26.110	24 44 10.9	22.54	09	08 17 09.98	24.533	23 21 06.8	54.41
10	06 17 03.57	26.109	24 46 21.0	20.83	10	08 19 36.99	24.473	23 15 36.2	55.78
11	06 19 40.22	26.107	24 48 20.9	19.12	11	08 22 03.65	24.413	23 09 57.5	57.13
12	06 22 16.85	26.103	24 50 10.4	17.40	12	08 24 29.94	24.351	23 04 10.6	58.48
13	06 24 53.46	26.099	24 51 49.7	15.68	13	08 26 55.86	24.289	22 58 15.7	59.81
14	06 27 30.04	26.093	24 53 18.6	13.97	14	08 29 21.41	24.227	22 52 12.9	61.13
15	06 30 06.57	26.084	24 54 37.3	12.26	15	08 31 46.58	24.163	22 46 02.2	62.43
16	06 32 43.05	26.075	24 55 45.7	10.55	16	08 34 11.37	24.100	22 39 43.7	63.73
17	06 35 19.47	26.064	24 56 43.9	08.84	17	08 36 35.78	24.036	22 33 17.5	65.00
18	06 37 55.82	26.052	24 57 31.8	07.13	18	08 38 59.80	23.971	22 26 43.7	66.27
19	06 40 32.09	26.038	24 58 09.5	05.43	19	08 41 23.43	23.906	22 20 02.3	67.52
20	06 43 08.27	26.023	24 58 37.0	03.73	20	08 43 46.67	23.841	22 13 13.5	68.74
21	06 45 44.36	26.006	24 58 54.2	02.03	21	08 46 09.52	23.775	22 06 17.4	69.96
22	06 48 20.34	25.987	24 59 01.3	00.33	22	08 48 31.97	23.708	21 59 14.0	71.18
23	06 50 56.20	25.967	24 58 58.2	01.36	23	08 50 54.02	23.641	21 52 03.3	72.37
24	06 53 31.94	25.946	N. 24 58 45.0	03.05	24	08 53 15.66	23.573	N. 21 44 45.6	73.54

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Monday 9.					Wednesday 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	08 53 15.66	23.573	N. 21 44 45.6	73.51	00	10 38 38.97	20.424	N. 14 03 24.1	113.41
01	08 55 36.90	23.507	21 37 20.8	74.71	01	10 40 41.35	20.368	13 52 02.1	113.92
02	08 57 57.74	23.439	21 29 49.1	75.85	02	10 42 43.38	20.311	13 40 37.1	114.41
03	09 00 18.17	23.371	21 22 10.6	76.98	03	10 44 45.08	20.256	13 29 09.2	114.90
04	09 02 38.19	23.303	21 14 25.3	78.10	04	10 46 46.45	20.200	13 17 38.3	115.38
05	09 04 57.80	23.235	21 06 33.4	79.21	05	10 48 47.48	20.145	13 06 04.7	115.83
06	09 07 17.01	23.167	20 58 34.8	80.30	06	10 50 48.19	20.092	12 54 28.3	116.29
07	09 09 35.80	23.098	20 50 29.8	81.37	07	10 52 48.58	20.038	12 42 49.2	116.73
08	09 11 54.18	23.029	20 42 18.4	82.43	08	10 54 48.65	19.986	12 31 07.5	117.17
09	09 14 12.15	22.961	20 34 00.6	83.48	09	10 56 48.41	19.934	12 19 23.2	117.58
10	09 16 29.71	22.892	20 25 36.6	84.52	10	10 58 47.86	19.882	12 07 36.5	117.99
11	09 18 46.85	22.823	20 17 06.4	85.53	11	11 00 46.99	19.831	11 55 47.3	118.39
12	09 21 03.58	22.754	20 08 30.2	86.53	12	11 02 45.83	19.782	11 43 55.8	118.78
13	09 23 19.90	22.685	19 59 48.0	87.52	13	11 04 44.37	19.732	11 32 02.0	119.16
14	09 25 35.80	22.616	19 50 59.9	88.49	14	11 06 42.61	19.683	11 20 05.9	119.53
15	09 27 51.29	22.547	19 42 06.1	89.45	15	11 08 40.56	19.634	11 08 07.7	119.88
16	09 30 06.36	22.478	19 33 06.5	90.40	16	11 10 38.22	19.587	10 56 07.4	120.23
17	09 32 21.03	22.410	19 24 01.3	91.33	17	11 12 35.60	19.540	10 44 05.0	120.57
18	09 34 35.28	22.341	19 14 50.6	92.24	18	11 14 32.70	19.494	10 32 00.6	120.89
19	09 36 49.12	22.273	19 05 34.4	93.14	19	11 16 29.53	19.448	10 19 54.3	121.21
20	09 39 02.55	22.204	18 56 12.9	94.03	20	11 18 26.08	19.403	10 07 46.1	121.52
21	09 41 15.57	22.137	18 46 46.0	94.91	21	11 20 22.36	19.359	9 55 36.1	121.81
22	09 43 28.19	22.069	18 37 14.0	95.77	22	11 22 18.39	19.316	9 43 24.4	122.10
23	09 45 40.10	22.001	N 18 27 36.8	96.62	23	11 24 14.15	19.273	N. 9 31 10.9	122.38
Tuesday 10.					Thursday 12.				
00	09 47 52.20	21.933	N. 18 17 54.6	97.44	00	11 26 09.66	19.231	N. 9 18 55.8	122.65
01	09 50 03.60	21.866	18 08 07.5	98.26	01	11 28 04.92	19.189	9 06 39.1	122.91
02	09 52 14.59	21.799	17 58 15.5	99.07	02	11 29 59.93	19.148	8 54 20.9	123.17
03	09 54 25.19	21.733	17 48 18.7	99.85	03	11 31 54.70	19.108	8 42 01.1	123.41
04	09 56 35.38	21.666	17 38 17.3	100.63	04	11 33 49.23	19.069	8 29 40.0	123.63
05	09 58 45.18	21.600	17 28 11.2	101.40	05	11 35 43.53	19.030	8 17 17.5	123.87
06	10 00 54.58	21.534	17 18 00.5	102.14	06	11 37 37.59	18.992	8 04 53.6	124.08
07	10 03 03.59	21.469	17 07 45.5	102.88	07	11 39 31.43	18.955	7 52 28.5	124.28
08	10 05 12.21	21.404	16 57 26.0	103.60	08	11 41 25.05	18.918	7 40 02.2	124.48
09	10 07 20.44	21.339	16 47 02.3	104.31	09	11 43 18.45	18.883	7 27 34.7	124.68
10	10 09 28.28	21.275	16 36 34.3	105.01	10	11 45 11.64	18.848	7 15 06.1	124.86
11	10 11 35.74	21.211	16 26 02.2	105.68	11	11 47 04.62	18.813	7 02 36.4	125.03
12	10 13 42.81	21.148	16 15 26.1	106.35	12	11 48 57.40	18.780	6 50 05.7	125.19
13	10 15 49.51	21.085	16 04 46.0	107.01	13	11 50 49.98	18.747	6 37 34.1	125.35
14	10 17 55.83	21.023	15 54 02.0	107.65	14	11 52 42.36	18.713	6 25 01.5	125.50
15	10 20 01.78	20.961	15 43 14.2	108.28	15	11 54 34.54	18.682	6 12 28.1	125.64
16	10 22 07.36	20.899	15 32 22.6	108.90	16	11 56 26.54	18.652	5 59 53.8	125.78
17	10 24 12.57	20.838	15 21 27.4	109.51	17	11 58 18.36	18.622	5 47 18.8	125.90
18	10 26 17.41	20.777	15 10 28.5	110.10	18	12 00 10.00	18.593	5 34 43.0	126.02
19	10 28 21.89	20.717	14 59 26.2	110.68	19	12 02 01.47	18.563	5 22 06.6	126.13
20	10 30 26.01	20.658	14 48 20.4	111.25	20	12 03 52.76	18.535	5 09 29.5	126.23
21	10 32 29.78	20.598	14 37 11.2	111.81	21	12 05 43.89	18.508	4 56 51.8	126.33
22	10 34 33.19	20.540	14 25 58.7	112.35	22	12 07 34.86	18.482	4 44 13.6	126.41
23	10 36 36.26	20.482	14 14 43.0	112.88	23	12 09 25.67	18.456	4 31 34.9	126.49
24	10 38 38.97	20.424	N. 14 03 24.1	113.41	24	12 11 16.33	18.431	N. 4 18 55.7	126.57

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Friday 13.					Sunday 15.				
	h m s		° ' "	"		h m s		° ' "	"
00	12 11 16.33	18.431	N. 4 18 55.7	126.57	00	13 38 12.87	18.067	S. 5 44 05.0	122.26
01	12 13 06.84	18.406	4 06 16.1	126.63	01	13 40 01.30	18.076	5 56 17.8	122.02
02	12 14 57.21	18.383	3 53 36.2	126.68	02	13 41 49.78	18.086	6 08 29.2	121.78
03	12 16 47.44	18.360	3 40 55.9	126.74	03	13 43 38.33	18.097	6 20 39.1	121.52
04	12 18 37.53	18.338	3 28 15.3	126.78	04	13 45 26.94	18.108	6 32 47.4	121.26
05	12 20 27.50	18.317	3 15 34.5	126.81	05	13 47 15.63	18.121	6 44 54.2	120.99
06	12 22 17.33	18.295	3 02 53.6	126.84	06	13 49 04.39	18.133	6 56 59.3	120.72
07	12 24 07.04	18.276	2 50 12.4	126.87	07	13 50 53.22	18.146	7 09 02.8	120.44
08	12 25 56.64	18.257	2 37 31.2	126.88	08	13 52 42.14	18.161	7 21 04.6	120.16
09	12 27 46.12	18.238	2 24 49.8	126.89	09	13 54 31.15	18.176	7 33 04.7	119.88
10	12 29 35.49	18.220	2 12 08.5	126.89	10	13 56 20.25	18.192	7 45 03.1	119.58
11	12 31 24.76	18.203	1 59 27.1	126.89	11	13 58 09.45	18.208	7 56 59.6	119.27
12	12 33 13.93	18.187	1 46 45.8	126.88	12	13 59 58.74	18.223	8 08 54.3	118.96
13	12 35 03.00	18.171	1 34 04.6	126.86	13	14 01 48.13	18.241	8 20 47.1	118.65
14	12 36 51.98	18.156	1 21 23.5	126.83	14	14 03 37.63	18.259	8 32 38.1	118.33
15	12 38 40.87	18.141	1 08 42.6	126.80	15	14 05 27.24	18.278	8 44 27.1	118.00
16	12 40 29.67	18.128	0 56 01.9	126.77	16	14 07 16.97	18.298	8 56 14.1	117.66
17	12 42 18.40	18.115	0 43 21.4	126.73	17	14 09 06.81	18.317	9 07 59.0	117.32
18	12 44 07.05	18.103	0 30 41.2	126.67	18	14 10 56.77	18.338	9 19 41.9	116.98
19	12 45 55.64	18.092	0 18 01.4	126.61	19	14 12 46.86	18.359	9 31 22.8	116.63
20	12 47 44.15	18.081	N. 0 05 21.9	126.55	20	14 14 37.08	18.381	9 43 01.4	116.26
21	12 49 32.61	18.071	S. 0 07 17.2	126.48	21	14 16 27.43	18.403	9 54 37.9	115.90
22	12 51 21.00	18.062	0 19 55.8	126.40	22	14 18 17.92	18.427	10 06 12.2	115.53
23	12 53 09.35	18.053	S. 0 32 34.0	126.33	23	14 20 08.55	18.450	S. 10 17 44.2	115.15
Saturday 14.					Monday 16.				
	h m s		° ' "	"		h m s		° ' "	"
00	12 54 57.64	18.045	S. 0 45 11.7	126.23	00	14 21 59.32	18.474	S. 10 29 14.0	114.77
01	12 56 45.89	18.038	0 57 48.8	126.13	01	14 23 50.24	18.499	10 40 41.4	114.37
02	12 58 34.10	18.032	1 10 25.3	126.03	02	14 25 41.31	18.525	10 52 06.4	113.97
03	13 00 22.27	18.026	1 23 01.2	125.93	03	14 27 32.54	18.551	11 03 29.0	113.57
04	13 02 10.41	18.021	1 35 36.4	125.81	04	14 29 23.92	18.578	11 14 49.2	113.15
05	13 03 58.52	18.017	1 48 10.9	125.69	05	14 31 15.47	18.605	11 26 06.8	112.73
06	13 05 46.61	18.013	2 00 44.7	125.57	06	14 33 07.18	18.633	11 37 21.9	112.31
07	13 07 34.68	18.010	2 13 17.7	125.43	07	14 34 59.06	18.662	11 48 34.5	111.88
08	13 09 22.73	18.008	2 25 49.9	125.29	08	14 36 51.12	18.691	11 59 44.4	111.43
09	13 11 10.77	18.007	2 38 21.2	125.15	09	14 38 43.35	18.720	12 10 51.6	110.98
10	13 12 58.81	18.006	2 50 51.7	125.00	10	14 40 35.76	18.751	12 21 56.1	110.53
11	13 14 46.84	18.005	3 03 21.2	124.84	11	14 42 28.36	18.782	12 32 57.9	110.07
12	13 16 34.87	18.006	3 15 49.8	124.68	12	14 44 21.14	18.813	12 43 56.9	109.60
13	13 18 22.91	18.008	3 28 17.4	124.51	13	14 46 14.11	18.845	12 54 53.1	109.13
14	13 20 10.96	18.009	3 40 43.9	124.33	14	14 48 07.28	18.878	13 05 46.4	108.63
15	13 21 59.02	18.012	3 53 09.4	124.16	15	14 50 00.64	18.910	13 16 36.7	108.14
16	13 23 47.10	18.015	4 05 33.8	123.98	16	14 51 54.20	18.944	13 27 24.1	107.65
17	13 25 35.20	18.019	4 17 57.1	123.78	17	14 53 47.97	18.979	13 38 08.5	107.14
18	13 27 23.33	18.023	4 30 19.2	123.58	18	14 55 41.95	19.013	13 48 49.8	106.63
19	13 29 11.48	18.029	4 42 40.1	123.38	19	14 57 36.13	19.048	13 59 28.1	106.12
20	13 30 59.68	18.036	4 54 59.7	123.17	20	14 59 30.53	19.084	14 10 03.2	105.58
21	13 32 47.91	18.042	5 07 18.1	122.95	21	15 01 25.14	19.120	14 20 35.1	105.05
22	13 34 36.18	18.049	5 19 35.1	122.72	22	15 03 19.97	19.158	14 31 03.8	104.51
23	13 36 24.50	18.058	5 31 50.7	122.49	23	15 05 15.03	19.195	14 41 29.2	103.96
24	13 38 12.87	18.067	S. 5 44 05.0	122.26	24	15 07 10.31	19.233	S. 14 51 51.3	103.40

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Tuesday 17.					Thursday 19.				
	h m s		° ' "			h m s		° ' "	
00	15 07 10.31	19.233	S. 14 51 51.3	103.40	00	16 44 36.42	21.470	S. 21 47 59.9	66.56.
01	15 09 05.82	19.271	15 02 10.0	102.83	01	16 46 45.39	21.521	21 54 36.3	65.57
02	15 11 01.56	19.309	15 12 25.3	102.26	02	16 48 54.67	21.573	22 01 06.7	64.57
03	15 12 57.53	19.349	15 22 37.1	101.68	03	16 51 04.26	21.623	22 07 31.1	63.56
04	15 14 53.75	19.389	15 32 45.4	101.09	04	16 53 14.14	21.673	22 13 49.4	62.53
05	15 16 50.20	19.429	15 42 50.2	100.50	05	16 55 24.33	21.723	22 20 01.5	61.50
06	15 18 46.90	19.470	15 52 51.4	99.89	06	16 57 34.82	21.773	22 26 07.4	60.46
07	15 20 43.84	19.511	16 02 48.9	99.28	07	16 59 45.61	21.823	22 32 07.0	59.41
08	15 22 41.03	19.553	16 12 42.7	98.65	08	17 01 56.70	21.873	22 38 00.3	58.35
09	15 24 38.47	19.594	16 22 32.7	98.02	09	17 04 08.08	21.923	22 43 47.2	57.28
10	15 26 36.16	19.637	16 32 18.9	97.38	10	17 06 19.77	21.973	22 49 27.7	56.20
11	15 28 34.11	19.680	16 42 01.3	96.74	11	17 08 31.75	22.022	22 55 01.6	55.11
12	15 30 32.32	19.723	16 51 39.8	96.08	12	17 10 44.03	22.071	23 00 29.0	54.02
13	15 32 30.79	19.767	17 01 14.3	95.43	13	17 12 56.60	22.119	23 05 49.8	52.92
14	15 34 29.52	19.811	17 10 44.9	94.75	14	17 15 09.46	22.168	23 11 04.0	51.80
15	15 36 28.52	19.856	17 20 11.3	94.07	15	17 17 22.61	22.217	23 16 11.4	50.67
16	15 38 27.79	19.901	17 29 33.7	93.38	16	17 19 36.06	22.265	23 21 12.0	49.53
17	15 40 27.33	19.947	17 38 51.9	92.68	17	17 21 49.79	22.312	23 26 05.7	48.38
18	15 42 27.15	19.992	17 48 05.9	91.98	18	17 24 03.80	22.358	23 30 52.6	47.24
19	15 44 27.23	20.038	17 57 15.6	91.26	19	17 26 18.09	22.406	23 35 32.6	46.08
20	15 46 27.60	20.084	18 06 21.0	90.54	20	17 28 32.67	22.453	23 40 05.5	44.90
21	15 48 28.24	20.130	18 15 22.1	89.81	21	17 30 47.52	22.498	23 44 31.4	43.73
22	15 50 29.10	20.178	18 24 18.7	89.07	22	17 33 02.65	22.544	23 48 50.3	42.54
23	15 52 30.37	20.225	S. 18 33 10.9	88.32	23	17 35 18.05	22.589	S. 23 53 01.9	41.34
Wednesday 18.					Friday 20.				
00	15 54 31.80	20.272	S. 18 41 58.5	87.55	00	17 37 33.72	22.634	S. 23 57 06.4	40.14
01	15 56 33.63	20.320	18 50 41.5	86.78	01	17 39 49.66	22.678	24 01 03.6	38.93
02	15 58 35.70	20.368	18 59 19.9	86.01	02	17 42 05.86	22.722	24 04 53.5	37.71
03	16 00 38.05	20.417	19 07 53.6	85.23	03	17 44 22.32	22.766	24 08 36.1	36.48
04	16 02 40.70	20.466	19 16 22.6	84.43	04	17 46 39.05	22.808	24 12 11.2	35.23
05	16 04 43.64	20.514	19 24 46.7	83.62	05	17 48 56.02	22.850	24 15 38.9	33.98
06	16 06 46.87	20.563	19 33 06.0	82.82	06	17 51 13.25	22.892	24 18 59.0	32.73
07	16 08 50.40	20.613	19 41 20.5	81.99	07	17 53 30.72	22.933	24 22 11.6	31.48
08	16 10 54.22	20.662	19 49 29.9	81.15	08	17 55 48.44	22.973	24 25 16.7	30.20
09	16 12 58.34	20.712	19 57 34.3	80.32	09	17 58 06.40	23.013	24 28 14.0	28.92
10	16 15 02.76	20.762	20 05 33.7	79.47	10	18 00 24.60	23.053	24 31 03.7	27.63
11	16 17 07.48	20.812	20 13 27.9	78.60	11	18 02 43.03	23.091	24 33 45.6	26.34
12	16 19 12.50	20.862	20 21 16.9	77.73	12	18 05 01.69	23.129	24 36 19.8	25.04
13	16 21 17.82	20.913	20 29 00.7	76.86	13	18 07 20.58	23.166	24 38 46.1	23.73
14	16 23 23.45	20.963	20 36 39.2	75.97	14	18 09 39.68	23.203	24 41 04.6	22.42
15	16 25 29.37	21.013	20 44 12.3	75.07	15	18 11 59.01	23.239	24 43 15.1	21.09
16	16 27 35.60	21.064	20 51 40.0	74.17	16	18 14 18.55	23.274	24 45 17.7	19.77
17	16 29 42.14	21.115	20 59 02.3	73.25	17	18 16 38.30	23.308	24 47 12.3	18.43
18	16 31 48.08	21.165	21 06 19.0	72.32	18	18 18 58.25	23.341	24 48 58.9	17.09
19	16 33 56.12	21.216	21 13 30.1	71.38	19	18 21 18.39	23.374	24 50 37.4	15.74
20	16 36 03.57	21.268	21 20 35.6	70.44	20	18 23 38.74	23.407	24 52 07.8	14.38
21	16 38 11.33	21.318	21 27 35.4	69.48	21	18 25 59.27	23.438	24 53 30.0	13.03
22	16 40 19.39	21.368	21 34 29.4	68.52	22	18 28 19.99	23.468	24 54 44.1	11.67
23	16 42 27.75	21.419	21 41 17.6	67.54	23	18 30 40.89	23.498	24 55 50.0	10.29
24	16 44 36.42	21.470	S. 21 47 59.9	66.56	24	18 33 01.96	23.526	S. 24 56 47.6	08.91

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Saturday 21.					Monday 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	18 33 01.96	23.526	S. 24 56 47.6	08.91	00	20 27 32.04	23.824	S. 22 55 25.2	59.54
01	18 35 23.20	23.554	24 57 36.9	07.53	01	20 29 54.94	23.808	22 49 23.8	60.92
02	18 37 44.61	23.582	24 58 17.9	06.14	02	20 32 17.74	23.793	22 43 14.2	62.29
03	18 40 06.18	23.608	24 58 50.6	04.75	03	20 34 40.45	23.775	22 36 56.3	63.68
04	18 42 27.91	23.633	24 59 14.9	03.35	04	20 37 03.04	23.757	22 30 30.1	65.04
05	18 44 49.78	23.658	24 59 30.8	01.95	05	20 39 25.53	23.739	22 23 55.8	66.39
06	18 47 11.80	23.682	24 59 38.3	00.55	06	20 41 47.91	23.720	22 17 13.4	67.74
07	18 49 33.96	23.704	24 59 37.4	00.86	07	20 44 10.17	23.699	22 10 22.9	69.09
08	18 51 56.25	23.726	24 59 28.0	02.28	08	20 46 32.30	23.679	22 03 24.3	70.43
09	18 54 18.67	23.747	24 59 10.1	03.70	09	20 48 54.32	23.658	21 56 17.7	71.77
10	18 56 41.21	23.766	24 58 43.6	05.12	10	20 51 16.20	23.636	21 49 03.1	73.08
11	18 59 03.86	23.785	24 58 08.7	06.54	11	20 53 37.95	23.613	21 41 40.7	74.40
12	19 01 26.63	23.803	24 57 25.1	07.98	12	20 55 59.56	23.591	21 34 10.3	75.72
13	19 03 49.50	23.821	24 56 33.0	09.40	13	20 58 21.04	23.568	21 26 32.1	77.02
14	19 06 12.48	23.838	24 55 32.3	10.83	14	21 00 42.37	23.543	21 18 46.1	78.32
15	19 08 35.55	23.852	24 54 23.0	12.28	15	21 03 03.55	23.518	21 10 52.3	79.60
16	19 10 58.70	23.866	24 53 05.0	13.72	16	21 05 24.58	23.493	21 02 50.9	80.87
17	19 13 21.94	23.880	24 51 38.4	15.15	17	21 07 45.47	23.468	20 54 41.9	82.14
18	19 15 45.26	23.892	24 50 03.2	16.59	18	21 10 06.19	23.441	20 46 25.2	83.41
19	19 18 08.64	23.903	24 48 19.3	18.03	19	21 12 26.76	23.415	20 38 01.0	84.65
20	19 20 32.09	23.913	24 46 26.8	19.48	20	21 14 47.17	23.388	20 29 29.4	85.89
21	19 22 55.60	23.923	24 44 25.6	20.93	21	21 17 07.42	23.361	20 20 50.3	87.13
22	19 25 19.17	23.932	24 42 15.7	22.38	22	21 19 27.50	23.333	20 12 03.8	88.36
23	19 27 42.78	23.938	S. 24 39 57.1	23.83	23	21 21 47.41	23.304	S. 20 03 10.0	89.57
Sunday 22.					Tuesday 24.				
00	19 30 06.43	23.945	S. 24 37 29.8	25.27	00	21 24 07.15	23.276	S. 19 54 09.0	90.77
01	19 32 30.12	23.951	24 34 53.9	26.72	01	21 26 26.72	23.247	19 45 00.8	91.97
02	19 34 53.84	23.956	24 32 09.2	28.17	02	21 28 46.11	23.218	19 35 45.4	93.16
03	19 37 17.59	23.959	24 29 15.9	29.62	03	21 31 05.33	23.188	19 26 22.9	94.33
04	19 39 41.35	23.962	24 26 13.8	31.07	04	21 33 24.37	23.158	19 16 53.4	95.49
05	19 42 05.13	23.963	24 23 03.1	32.51	05	21 35 43.23	23.128	19 07 17.0	96.65
06	19 44 28.91	23.964	24 19 43.7	33.96	06	21 38 01.91	23.098	18 57 33.6	97.80
07	19 46 52.70	23.964	24 16 15.6	35.40	07	21 40 20.40	23.068	18 47 43.4	98.93
08	19 49 16.48	23.963	24 12 38.9	36.84	08	21 42 38.72	23.037	18 37 46.5	90.04
09	19 51 40.25	23.961	24 08 53.5	38.28	09	21 44 56.84	23.005	18 27 42.9	101.16
10	19 54 04.01	23.958	24 04 59.5	39.72	10	21 47 14.78	22.975	18 17 32.6	102.26
11	19 56 27.75	23.954	24 00 56.9	41.16	11	21 49 32.54	22.943	18 07 15.8	103.35
12	19 58 51.46	23.949	23 56 45.6	42.60	12	21 51 50.10	22.912	17 56 52.4	104.43
13	20 01 15.14	23.943	23 52 25.7	44.03	13	21 54 07.48	22.880	17 46 22.6	105.49
14	20 03 38.78	23.937	23 47 57.3	45.46	14	21 56 24.66	22.848	17 35 46.5	106.55
15	20 06 02.38	23.929	23 43 20.2	46.89	15	21 58 41.66	22.818	17 25 04.0	107.60
16	20 08 25.93	23.921	23 38 34.6	48.31	16	22 00 58.47	22.785	17 14 15.3	108.63
17	20 10 49.43	23.912	23 33 40.5	49.72	17	22 03 15.08	22.753	17 03 20.4	109.65
18	20 13 12.87	23.902	23 28 38.0	51.13	18	22 05 31.51	22.722	16 52 19.5	110.66
19	20 15 36.25	23.892	23 23 26.9	52.55	19	22 07 47.74	22.690	16 41 12.5	111.66
20	20 17 59.57	23.880	23 18 07.4	53.96	20	22 10 03.79	22.658	16 29 59.6	112.64
21	20 20 22.81	23.867	23 12 39.4	55.37	21	22 12 19.64	22.626	16 18 40.8	113.62
22	20 22 45.97	23.853	23 07 03.0	56.76	22	22 14 35.30	22.595	16 07 16.2	114.58
23	20 25 09.05	23.839	23 01 18.3	58.15	23	22 16 50.78	22.563	15 55 45.9	115.53
24	20 27 32.04	23.824	S. 22 55 25.2	59.54	24	22 19 06.06	22.532	S. 15 44 09.9	116.47

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Wednesday 25.					Friday 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	22 19 06.06	22.532	S. 15 44 09.9	116.47	00	00 04 08.17	21.397	S. 5 01 49.6	146.07
01	22 21 21.16	22.501	15 32 28.3	117.38	01	00 06 16.52	21.386	4 47 12.3	146.36
02	22 23 36.07	22.469	15 20 41.3	118.29	02	00 08 24.80	21.375	4 32 33.3	146.63
03	22 25 50.79	22.438	15 08 48.8	119.20	03	00 10 33.02	21.365	4 17 52.7	146.89
04	22 28 05.32	22.407	14 56 50.9	120.08	04	00 12 41.18	21.356	4 03 10.6	147.14
05	22 30 19.67	22.376	14 44 47.8	120.95	05	00 14 49.29	21.348	3 48.27.0	147.38
06	22 32 33.83	22.345	14 32 39.5	121.82	06	00 16 57.35	21.339	3 33 42.0	147.60
07	22 34 47.81	22.315	14 20 26.0	122.67	07	00 19 05.36	21.333	3 18 55.8	147.80
08	22 37 01.61	22.284	14 08 07.5	123.50	08	00 21 13.34	21.326	3 04 08.4	148.00
09	22 39 15.22	22.254	13 55 44.0	124.33	09	00 23 21.27	21.320	2 49 19.8	148.18
10	22 41 28.66	22.225	13 43 15.6	125.13	10	00 25 29.18	21.315	2 34 30.2	148.35
11	22 43 41.92	22.195	13 30 42.4	125.93	11	00 27 37.05	21.310	2 19 39.6	148.50
12	22 45 55.00	22.166	13 18 04.4	126.72	12	00 29 44.90	21.307	2 04 48.2	148.63
13	22 48 07.91	22.138	13 05 21.8	127.49	13	00 31 52.73	21.303	1 49 56.0	148.77
14	22 50 20.65	22.108	12 52 34.5	128.25	14	00 34 00.54	21.301	1 35 03.0	148.88
15	22 52 33.21	22.079	12 39 42.8	128.98	15	00 36 08.34	21.299	1 20 09.5	148.98
16	22 54 45.60	22.052	12 26 46.7	129.72	16	00 38 16.13	21.298	1 05 15.3	149.07
17	22 56 57.83	22.024	12 13 46.2	130.44	17	00 40 23.92	21.298	0 50 20.7	149.13
18	22 59 09.89	21.996	12 00 41.4	131.15	18	00 42 31.71	21.298	0 35 25.8	149.18
19	23 01 21.78	21.969	11 47 32.4	131.83	19	00 44 39.50	21.299	0 20 30.5	149.24
20	23 03 33.52	21.943	11 34 19.4	132.51	20	00 46 47.30	21.302	S. 0 05 34.9	149.27
21	23 05 45.10	21.917	11 21 02.3	133.18	21	00 48 55.12	21.304	N. 0 09 20.7	149.28
22	23 07 56.52	21.891	11 07 41.2	133.84	22	00 51 02.95	21.308	0 24 16.5	149.29
23	23 10 07.79	21.866	S. 10 54 16.2	134.48	23	00 53 10.81	21.312	N. 0 39 12.2	149.28
Thursday 26.					Saturday 28.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	23 12 18.91	21.841	S. 10 40 47.5	135.09	00	00 55 18.69	21.316	N. 0 54 07.8	149.25
01	23 14 29.88	21.817	10 27 15.1	135.71	01	00 57 26.60	21.322	1 09 03.2	149.22
02	23 16 40.71	21.793	10 13 39.0	136.32	02	00 59 34.55	21.328	1 23 58.4	149.18
03	23 18 51.39	21.768	9 59 59.3	136.90	03	01 01 42.54	21.335	1 38 53.3	149.11
04	23 21 01.93	21.746	9 46 16.2	137.47	04	01 03 50.57	21.343	1 53 47.7	149.03
05	23 23 12.34	21.723	9 32 29.7	138.03	05	01 05 58.65	21.351	2 08 41.6	148.93
06	23 25 22.61	21.701	9 18 39.9	138.57	06	01 08 06.78	21.359	2 23 34.9	148.83
07	23 27 32.75	21.679	9 04 46.9	139.10	07	01 10 14.96	21.369	2 38 27.6	148.72
08	23 29 42.76	21.658	8 50 50.7	139.63	08	01 12 23.21	21.381	2 53 19.5	148.58
09	23 31 52.65	21.638	8 36 51.4	140.13	09	01 14 31.53	21.392	3 08 10.6	148.43
10	23 34 02.41	21.617	8 22 49.2	140.61	10	01 16 39.91	21.403	3 23 00.7	148.28
11	23 36 12.05	21.598	8 08 44.1	141.09	11	01 18 48.37	21.416	3 37 49.9	148.11
12	23 38 21.58	21.579	7 54 36.1	141.56	12	01 20 56.90	21.429	3 52 38.0	147.93
13	23 40 31.00	21.560	7 40 25.4	142.01	13	01 23 05.52	21.443	4 07 25.0	147.73
14	23 42 40.30	21.543	7 26 12.0	142.45	14	01 25 14.22	21.458	4 22 10.7	147.50
15	23 44 49.51	21.526	7 11 56.0	142.87	15	01 27 23.02	21.474	4 36 55.0	147.28
16	23 46 58.61	21.508	6 57 37.6	143.28	16	01 29 31.91	21.490	4 51 38.0	147.04
17	23 49 07.61	21.493	6 43 16.7	143.68	17	01 31 40.90	21.507	5 06 19.5	146.78
18	23 51 16.52	21.478	6 28 53.5	144.06	18	01 33 49.99	21.524	5 20 59.4	146.52
19	23 53 25.34	21.462	6 14 28.0	144.43	19	01 35 59.19	21.543	5 35 37.7	146.24
20	23 55 34.06	21.448	6 00 00.3	144.78	20	01 38 08.51	21.563	5 50 14.3	145.94
21	23 57 42.71	21.434	5 45 30.6	145.13	21	01 40 17.94	21.582	6 04 49.0	145.63
22	23 59 51.27	21.421	5 30 58.8	145.46	22	01 42 27.49	21.602	6 19 21.8	145.31
23	00 01 59.76	21.408	5 16 25.1	145.77	23	01 44 37.16	21.623	6 33 52.7	144.98
24	00 04 08.17	21.397	S. 5 01 49.6	146.07	24	01 46 46.97	21.646	N. 6 48 21.5	144.62

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension	Var. in rom.	Declination.	Var. in rom.
Sunday 29.					Tuesday 31.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	01 46 46.97	21.646	N. 6 48 21.5	144.62	00	03 34 20.03	23.350	N. 17 15 48.3	111.46
01	01 48 56.91	21.668	7 02 48.1	144.26	01	03 36 40.26	23.394	17 26 54.0	110.43
02	01 51 06.98	21.691	7 17 12.6	143.88	02	03 39 00.76	23.439	17 37 53.4	109.37
03	01 53 17.20	21.715	7 31 34.7	143.48	03	03 41 21.53	23.484	17 48 46.4	108.31
04	01 55 27.56	21.740	7 45 54.4	143.08	04	03 43 42.57	23.529	17 59 33.1	107.24
05	01 57 38.08	21.765	8 00 11.7	142.67	05	03 46 03.88	23.573	18 10 13.3	106.16
06	01 59 48.74	21.790	8 14 26.4	142.23	06	03 48 25.45	23.618	18 20 47.0	105.06
07	02 01 59.56	21.818	8 28 38.4	141.78	07	03 50 47.29	23.663	18 31 14.0	103.94
08	02 04 10.55	21.844	8 42 47.8	141.32	08	03 53 09.40	23.708	18 41 34.3	102.82
09	02 06 21.69	21.872	8 56 54.3	140.84	09	03 55 31.78	23.753	18 51 47.8	101.68
10	02 08 33.01	21.901	9 10 57.9	140.36	10	03 57 54.43	23.797	19 01 54.4	100.53
11	02 10 44.50	21.929	9 24 58.6	139.86	11	04 00 17.34	23.841	19 11 54.1	99.37
12	02 12 56.16	21.958	9 38 56.2	139.34	12	04 02 40.52	23.886	19 21 46.8	98.19
13	02 15 08.00	21.989	9 52 50.7	138.82	13	04 05 03.97	23.930	19 31 32.4	96.99
14	02 17 20.03	22.021	10 06 42.0	138.27	14	04 07 27.68	23.973	19 41 10.7	95.78
15	02 19 32.25	22.052	10 20 29.9	137.71	15	04 09 51.65	24.018	19 50 41.8	94.58
16	02 21 44.65	22.083	10 34 14.5	137.14	16	04 12 15.89	24.062	20 00 05.6	93.35
17	02 23 57.25	22.116	10 47 55.6	136.55	17	04 14 40.39	24.104	20 09 22.0	92.10
18	02 26 10.04	22.149	11 01 33.1	135.95	18	04 17 05.14	24.148	20 18 30.8	90.84
19	02 28 23.04	22.183	11 15 07.0	135.34	19	04 19 30.16	24.191	20 27 32.1	89.58
20	02 30 36.24	22.218	11 28 37.2	134.71	20	04 21 55.43	24.233	20 36 25.8	88.30
21	02 32 49.65	22.253	11 42 03.5	134.07	21	04 24 20.95	24.275	20 45 11.7	87.01
22	02 35 03.27	22.288	11 55 26.0	133.42	22	04 26 46.73	24.318	20 53 49.9	85.72
23	02 37 17.10	22.323	N. 12 08 44.5	132.74	23	04 29 12.76	24.358	N. 21 02 20.3	84.40
Monday 30.					Wednesday, FEB. 1.				
00	02 39 31.15	22.360	N. 12 21 58.9	132.06	00	04 31 39.03	24.399	N. 21 10 42.7	83.07
01	02 41 45.42	22.397	12 35 09.2	131.36					
02	02 43 59.91	22.434	12 48 15.2	130.65					
03	02 46 14.63	22.473	13 01 17.0	129.93					
04	02 48 29.58	22.511	13 14 14.3	129.18					
05	02 50 44.76	22.549	13 27 07.1	128.43					
06	02 53 00.17	22.588	13 39 55.4	127.67					
07	02 55 15.82	22.628	13 52 39.1	126.88					
08	02 57 31.71	22.668	14 05 18.0	126.08					
09	02 59 47.83	22.708	14 17 52.1	125.28					
10	03 02 04.20	22.749	14 30 21.3	124.45					
11	03 04 20.82	22.791	14 42 45.5	123.61					
12	03 06 37.69	22.832	14 55 04.6	122.76					
13	03 08 54.80	22.873	15 07 18.6	121.89					
14	03 11 12.17	22.916	15 19 27.3	121.02					
15	03 13 29.79	22.958	15 31 30.8	120.13					
16	03 15 47.66	23.001	15 43 28.8	119.21					
17	03 18 05.80	23.044	15 55 21.3	118.29					
18	03 20 24.19	23.087	16 07 08.3	117.36					
19	03 22 42.84	23.130	16 18 49.6	116.40					
20	03 25 01.75	23.173	16 30 25.1	115.44					
21	03 27 20.92	23.218	16 41 54.9	114.47					
22	03 29 40.36	23.262	16 53 18.7	113.47					
23	03 32 00.06	23.306	17 04 36.5	112.47					
24	03 34 20.03	23.350	N. 17 15 48.3	111.46					

PHASES OF THE MOON.			
		h	m
Jan. 7	○ Full Moon	..	06 07.7
" 14	☾ Last Quarter	..	21 13.6
" 22	☾ New Moon	..	20 18.7
" 29	☾ First Quarter	..	19 25.6

		h	
Jan. 3	☾ Perigee	..	22.6
" 15	☾ Apogee	..	18.8
" 29	☾ Perigee	..	11.5

AT APPARENT NOON.

Date.		THE SUN'S				Sideral Time of the Semi- diameter passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Var. in 1 hour.
		Apparent Right Ascension	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.			
		h m s	s	° ' "	"	m s	m s	s
Wed.	1	20 55 27.88	10.221	S. 17 21 56.6	41.98	1 08.33	13 35.85	0.363
Thur.	2	20 59 32.76	10.186	17 04 59.9	42.74	1 08.21	13 44.15	0.328
Frid.	3	21 03 36.80	10.151	16 47 45.3	43.48	1 08.10	13 51.62	0.294
Sat.	4	21 07 40.02	10.117	16 30 13.2	44.20	1 07.99	13 58.26	0.259
Sun.	5	21 11 42.40	10.082	16 12 23.9	44.90	1 07.87	14 04.07	0.225
Mon.	6	21 15 43.97	10.049	15 54 17.9	45.59	1 07.76	14 09.07	0.192
Tues.	7	21 19 44.74	10.015	15 35 55.6	46.26	1 07.64	14 13.27	0.158
Wed.	8	21 23 44.70	9.982	15 17 17.3	46.92	1 07.53	14 16.67	0.125
Thur.	9	21 27 43.88	9.949	14 58 23.5	47.56	1 07.42	14 19.28	0.093
Frid.	10	21 31 42.27	9.917	14 39 14.6	48.18	1 07.30	14 21.12	0.060
Sat.	11	21 35 39.89	9.885	14 19 50.9	48.79	1 07.19	14 22.18	0.028
Sun.	12	21 39 36.75	9.853	14 00 12.9	49.38	1 07.08	14 22.48	0.003
Mon.	13	21 43 32.85	9.822	13 40 21.0	49.95	1 06.97	14 22.03	0.034
Tues.	14	21 47 28.22	9.791	13 20 15.5	50.50	1 06.86	14 20.84	0.065
Wed.	15	21 51 22.85	9.761	12 59 57.0	51.04	1 06.76	14 18.92	0.095
Thur.	16	21 55 16.75	9.731	12 39 25.7	51.56	1 06.65	14 16.28	0.125
Frid.	17	21 59 09.95	9.702	12 18 42.1	52.07	1 06.55	14 12.93	0.154
Sat.	18	22 03 02.44	9.673	11 57 46.7	52.55	1 06.45	14 08.88	0.183
Sun.	19	22 06 54.25	9.644	11 36 39.8	53.02	1 06.35	14 04.15	0.212
Mon.	20	22 10 45.37	9.616	11 15 21.8	53.47	1 06.25	13 58.73	0.240
Tues.	21	22 14 35.82	9.588	10 53 53.3	53.90	1 06.15	13 52.64	0.267
Wed.	22	22 18 25.61	9.561	10 32 14.6	54.32	1 06.06	13 45.90	0.295
Thur.	23	22 22 14.75	9.534	10 10 26.2	54.71	1 05.97	13 38.50	0.321
Frid.	24	22 26 03.25	9.508	9 48 28.5	55.09	1 05.88	13 30.47	0.348
Sat.	25	22 29 51.12	9.482	9 26 21.9	55.45	1 05.79	13 21.81	0.374
Sun.	26	22 33 38.38	9.457	9 04 06.9	55.79	1 05.70	13 12.54	0.399
Mon.	27	22 37 25.04	9.432	8 41 43.9	56.12	1 05.62	13 02.67	0.423
Tues.	28	22 41 11.12	9.408	8 19 13.3	56.43	1 05.54	12 52.23	0.447
Wed.	29	22 44 56.63	9.385	7 56 35.5	56.72	1 05.46	12 41.21	0.470
Thur.	30	22 48 41.60	9.363	S. 7 33 51.0	56.99	1 05.39	12 29.66	0.492

* Mean Time of the Semidiameter passing may be found by subtracting 0.18 from the Sideral Time

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*		
		h m s	° ' "	' "	m s	h m s
Wed.	1	20 55 25.57	S. 17 22 06.1	16 15.46	13 35.77	20 41 49.80
Thur.	2	20 59 30.43	17 05 09.7	16 15.32	13 44.08	20 45 46.35
Frid.	3	21 03 34.46	16 47 55.3	16 15.18	13 51.55	20 49 42.91
Sat.	4	21 07 37.66	16 30 23.4	16 15.03	13 58.20	20 53 39.46
Sun.	5	21 11 40.04	16 12 34.4	16 14.87	14 04.02	20 57 36.02
Mon.	6	21 15 41.60	15 54 28.7	16 14.71	14 09.03	21 01 32.58
Tues.	7	21 19 42.36	15 36 06.6	16 14.55	14 13.23	21 05 29.13
Wed.	8	21 23 42.33	15 17 28.5	16 14.38	14 16.64	21 09 25.69
Thur.	9	21 27 41.50	14 58 34.9	16 14.20	14 19.26	21 13 22.24
Frid.	10	21 31 39.90	14 39 26.1	16 14.02	14 21.10	21 17 18.80
Sat.	11	21 35 37.52	14 20 02.6	16 13.84	14 22.17	21 21 15.35
Sun.	12	21 39 34.39	14 00 24.8	16 13.65	14 22.48	21 25 11.91
Mon.	13	21 43 30.50	13 40 32.9	16 13.45	14 22.04	21 29 08.46
Tues.	14	21 47 25.88	13 20 27.6	16 13.26	14 20.86	21 33 05.02
Wed.	15	21 51 20.52	13 00 09.1	16 13.06	14 18.95	21 37 01.57
Thur.	16	21 55 14.44	12 39 37.9	16 12.85	14 16.31	21 40 58.13
Frid.	17	21 59 07.65	12 18 54.4	16 12.65	14 12.97	21 44 54.68
Sat.	18	22 03 00.16	11 57 59.0	16 12.44	14 08.93	21 48 51.24
Sun.	19	22 06 51.99	11 36 52.2	16 12.23	14 04.20	21 52 47.79
Mon.	20	22 10 43.13	11 15 34.3	16 12.02	13 58.79	21 56 44.34
Tues.	21	22 14 33.60	10 54 05.8	16 11.80	13 52.71	22 00 40.90
Wed.	22	22 18 23.42	10 32 27.1	16 11.58	13 45.97	22 04 37.45
Thur.	23	22 22 12.58	10 10 38.6	16 11.36	13 38.58	22 08 34.01
Frid.	24	22 26 01.11	9 48 40.9	16 11.15	13 30.55	22 12 30.56
Sat.	25	22 29 49.01	9 26 34.3	16 10.92	13 21.90	22 16 27.12
Sun.	26	22 33 36.30	9 04 19.2	16 10.70	13 12.63	22 20 23.67
Mon.	27	22 37 22.99	8 41 56.1	16 10.47	13 02.77	22 24 20.22
Tues.	28	22 41 09.10	8 19 25.4	16 10.25	12 52.32	22 28 16.78
Wed.	29	22 44 54.64	7 56 47.5	16 10.02	12 41.31	22 32 13.33
Thur.	30	22 48 39.65	S. 7 34 02.8	16 09.78	12 29.76	22 36 09.88

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
	12h.	12h.			0h.	12h.	0h.	12h.
	° ' "	"		h' m s	" "	" "	" "	" "
1	311 23 47.0	S. 0.05	9.9935971	15 17 37.74	16 04.28	16 02.57	58 59.05	58 52.77
2	312 24 39.4	N. 0.08	.9936584	15 13 41.83	16 00.51	15 58.08	58 45.20	58 36.30
3	313 25 30.5	0.20	.9937222	15 09 45.92	15 55.29	15 52.12	58 26.03	58 14.40
4	314 26 20.4	0.30	9.9937883	15 05 50.01	15 48.58	15 44.71	58 01.43	57 47.21
5	315 27 09.0	0.39	.9938570	15 01 54.10	15 40.53	15 36.08	57 31.87	57 15.55
6	316 27 56.5	0.45	.9939281	14 57 58.19	15 31.43	15 26.64	56 58.48	56 40.90
7	317 28 42.7	0.48	9.9940017	14 54 02.28	15 21.79	15 16.95	56 23.08	56 05.32
8	318 29 27.9	0.49	.9940777	14 50 06.37	15 12.21	15 07.65	55 47.92	55 31.18
9	319 30 11.9	0.46	.9941559	14 46 10.46	15 03.35	14 59.40	55 15.42	55 00.92
10	320 30 54.8	0.40	9.9942363	14 42 14.55	14 55.87	14 52.82	54 47.95	54 36.76
11	321 31 36.5	0.33	.9943187	14 38 18.64	14 50.32	14 48.41	54 27.57	54 20.58
12	322 32 17.2	0.23	.9944030	14 34 22.73	14 47.15	14 46.56	54 15.94	54 15.78
13	323 32 56.7	N. 0.12	9.9944892	14 30 26.82	14 46.67	14 47.50	54 14.19	54 17.23
14	324 33 35.1	S. 0.01	.9945770	14 26 50.92	14 49.05	14 51.31	54 22.91	54 31.21
15	325 34 12.3	0.14	.9946664	14 22 35.01	14 54.27	14 57.90	54 42.67	54 55.38
16	326 34 48.3	0.26	9.9947572	14 18 39.10	15 02.15	15 06.96	55 10.98	55 28.07
17	327 35 23.0	0.38	.9948494	14 14 43.19	15 12.28	15 18.01	55 48.10	56 00.22
18	328 35 56.4	0.50	.9949426	14 10 47.28	15 24.06	15 30.32	56 31.44	56 51.41
19	329 36 28.5	0.60	9.9950369	14 06 51.37	15 36.68	15 42.99	57 17.75	57 40.91
20	330 36 59.1	0.67	.9951321	14 02 55.46	15 49.14	15 54.99	58 03.47	58 24.93
21	331 37 28.2	0.71	.9952281	13 58 59.55	16 00.41	16 05.28	58 44.82	59 02.73
22	332 37 55.7	0.73	9.9953248	13 55 03.65	16 09.52	16 13.03	59 18.27	59 31.17
23	333 38 21.5	0.72	.9954223	13 51 07.74	16 15.77	16 17.70	59 41.21	59 45.30
24	334 38 45.4	0.67	.9955206	13 47 11.83	16 18.82	16 19.17	59 52.43	59 53.68
25	335 39 07.5	0.59	9.9956197	13 43 15.92	16 18.77	16 17.69	59 52.22	59 48.28
26	336 39 27.5	0.49	.9957197	13 39 20.01	16 16.02	16 13.82	59 42.14	59 34.08
27	337 39 45.6	0.37	.9958207	13 35 24.11	16 11.20	16 08.21	59 24.42	59 12.48
28	338 40 01.6	0.24	9.9959228	13 31 28.20	16 04.95	16 01.47	59 01.50	58 48.73
29	339 40 15.6	S. 0.11	.9960262	13 27 32.29	15 57.83	15 54.09	58 35.39	58 21.63
30	340 40 27.4	N. 0.01	9.9961309	13 23 36.38	15 50.26	15 46.37	58 07.56	57 53.32

MEAN TIME.

Day of the Month.	THE MOON'S						
	Longitude.		Latitude.		Age.	Meridian Passage.	
	oh.	12h.	oh.	12h.	oh.	Upper.	Lower.
	° ' "	° ' "	° ' "	° ' "	d	h m	h m
1	69 28 22.4	76 27 39.3	S. 0 42 35.7	S. 0 05 09.1	9.15	20 39.6	08 10.5
2	83 25 39.4	90 22 11.1	N. 0 32 13.3	N. 1 08 56.7	10.15	21 38.8	09 09.1
3	97 17 01.1	104 09 53.5	1 44 27.5	2 18 13.7	11.15	22 37.9	10 08.5
4	111 00 31.0	117 48 34.9	2 49 46.0	3 18 38.1	12.15	23 34.9	11 06.8
5	124 33 46.0	131 15 45.2	3 44 27.6	4 06 56.0	13.15	* *	12 02.2
6	137 54 15.0	144 29 00.1	4 25 49.2	4 40 57.1	14.15	00 28.6	12 53.9
7	150 59 47.7	157 26 29.4	4 52 14.2	4 59 38.7	15.15	01 18.4	13 41.9
8	163 49 00.7	170 07 22.5	5 03 12.6	5 03 00.5	16.15	02 04.6	14 26.6
9	176 21 40.1	182 32 04.4	4 59 10.2	4 51 50.9	17.15	02 48.0	15 09.0
10	188 38 50.9	194 42 20.0	4 41 13.9	4 27 31.1	18.15	03 29.6	15 50.1
11	200 42 56.4	206 41 08.8	4 10 55.6	3 51 40.7	19.15	04 10.4	16 30.9
12	212 37 29.2	218 32 32.7	3 30 00.0	3 06 07.4	20.15	04 51.5	17 12.4
13	224 26 56.9	230 21 21.2	2 40 17.0	2 12 42.7	21.15	05 33.7	17 55.5
14	236 16 26.2	242 12 53.3	1 43 39.3	1 13 21.8	22.15	06 17.9	18 41.0
15	248 11 24.3	254 12 40.0	N. 0 42 06.0	N. 0 10 08.6	23.15	07 04.9	19 29.5
16	260 17 19.9	266 26 01.6	S. 0 22 12.5	S. 0 54 37.9	24.15	07 54.9	20 21.0
17	272 39 19.4	278 57 43.6	1 26 46.5	1 58 15.6	25.15	08 47.7	21 15.0
18	285 21 39.5	291 51 26.1	2 28 40.8	2 57 35.7	26.15	09 42.6	22 10.4
19	298 27 15.3	305 09 10.7	3 24 33.0	3 49 04.4	27.15	10 38.2	23 05.9
20	311 57 07.4	318 50 51.0	4 10 41.4	4 28 56.7	28.15	11 33.3	* *
21	325 49 57.9	332 53 55.9	4 43 24.4	4 53 42.0	29.15	12 27.0	00 00.3
22	340 02 04.8	347 13 38.2	4 59 31.0	5 00 38.5	0.60	13 19.0	00 53.2
23	354 27 45.5	1 43 33.7	4 56 57.5	4 48 27.8	1.60	14 09.8	01 44.5
24	9 00 10.1	16 16 44.7	4 35 16.0	4 17 35.4	2.60	15 00.2	02 35.0
25	23 32 31.7	30 46 51.0	3 55 45.3	3 30 10.3	3.60	15 51.1	03 25.5
26	37 59 09.8	45 09 02.1	3 01 19.5	2 29 44.6	4.60	16 43.4	04 17.0
27	52 16 09.7	59 20 20.3	1 56 00.0	1 20 40.6	5.60	17 37.9	05 10.4
28	66 21 27.9	73 19 31.1	S. 0 44 22.1	S. 0 07 39.2	6.60	18 34.6	06 06.0
29	80 14 31.8	87 06 34.4	N. 0 28 54.3	N. 1 04 45.9	7.60	19 32.7	07 03.5
30	93 55 44.0	100 42 06.2	N. 1 39 25.4	N. 2 12 24.6	8.60	20 30.9	08 01.9

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Wednesday 1.					Friday 3.				
	h m s		° ' "			h m s		° ' "	
00	04 31 39.23	24.390	N. 21 10 42.7	83.07	00	06 32 08.82	25.436	N. 24 59 13.9	09.71
01	04 34 05.55	24.440	21 18 57.1	81.73	01	06 34 41.42	25.431	25 00 07.3	08.08
02	04 36 32.31	24.480	21 27 03.5	80.38	02	06 37 13.99	25.425	25 00 50.8	06.44
03	04 38 59.31	24.520	21 35 01.7	79.03	03	06 39 46.52	25.417	25 01 24.6	04.82
04	04 41 26.55	24.559	21 42 51.8	77.66	04	06 42 18.99	25.408	25 01 48.6	03.19
05	04 43 54.02	24.598	21 50 33.6	76.28	05	06 44 51.41	25.398	25 02 02.9	01.58
06	04 46 21.72	24.636	21 58 07.1	74.88	06	06 47 23.76	25.385	25 02 07.5	00.05
07	04 48 49.65	24.673	22 05 32.2	73.48	07	06 49 56.03	25.373	25 02 02.3	01.67
08	04 51 17.80	24.710	22 12 48.9	72.08	08	06 52 28.23	25.358	25 01 47.5	03.28
09	04 53 46.17	24.746	22 19 57.1	70.65	09	06 55 00.33	25.343	25 01 22.9	04.90
10	04 56 14.75	24.782	22 26 56.7	69.21	10	06 57 32.34	25.327	25 00 48.7	06.51
11	04 58 43.55	24.817	22 33 47.6	67.77	11	07 00 04.25	25.308	25 00 04.8	08.12
12	05 01 12.55	24.851	22 40 29.9	66.33	12	07 02 36.04	25.289	24 59 11.3	09.72
13	05 03 41.76	24.884	22 47 03.5	64.86	13	07 05 07.72	25.269	24 58 08.2	11.32
14	05 06 11.16	24.917	22 53 28.2	63.38	14	07 07 39.27	25.247	24 56 55.5	12.92
15	05 08 40.76	24.949	22 59 44.1	61.91	15	07 10 10.68	25.223	24 55 33.2	14.50
16	05 11 10.55	24.980	23 05 51.1	60.42	16	07 12 41.95	25.200	24 54 01.5	16.08
17	05 13 40.52	25.011	23 11 49.1	58.93	17	07 15 13.08	25.175	24 52 20.2	17.67
18	05 16 10.68	25.040	23 17 38.2	57.43	18	07 17 44.05	25.148	24 50 29.5	19.24
19	05 18 41.00	25.068	23 23 18.2	55.91	19	07 20 14.86	25.121	24 48 29.3	20.81
20	05 21 11.49	25.096	23 28 49.1	54.38	20	07 22 45.50	25.092	24 46 19.8	22.37
21	05 23 42.15	25.125	23 34 10.8	52.86	21	07 25 15.96	25.062	24 44 10.9	23.93
22	05 26 12.97	25.148	23 39 23.4	51.33	22	07 27 46.24	25.031	24 41 32.1	25.48
23	05 28 43.93	25.173	N. 23 44 26.7	49.78	23	07 30 16.33	24.998	N. 24 38 55.2	27.02
Thursday 2.					Saturday 4.				
	h m s		° ' "			h m s		° ' "	
00	05 31 15.05	25.198	N. 23 49 20.7	48.23	00	07 32 46.22	24.965	N. 24 36 18.5	28.55
01	05 33 46.31	25.221	23 54 05.4	46.68	01	07 35 15.91	24.932	24 33 12.1	30.08
02	05 36 17.70	25.243	23 58 40.8	45.11	02	07 37 45.10	24.896	24 30 07.0	31.60
03	05 38 49.22	25.263	24 03 06.7	43.53	03	07 40 14.66	24.858	24 26 53.4	33.12
04	05 41 20.86	25.283	24 07 23.2	41.97	04	07 42 43.70	24.822	24 23 30.2	34.61
05	05 43 52.61	25.302	24 11 30.3	40.38	05	07 45 12.52	24.783	24 19 50.1	36.11
06	05 46 24.48	25.320	24 15 27.8	38.79	06	07 47 41.10	24.743	24 16 16.0	37.60
07	05 48 56.45	25.336	24 19 15.8	37.21	07	07 50 09.43	24.703	24 12 26.0	39.07
08	05 51 28.51	25.351	24 22 54.3	35.62	08	07 52 37.53	24.662	24 08 20.1	40.53
09	05 54 00.66	25.365	24 26 23.2	34.02	09	07 55 05.37	24.619	24 04 20.5	41.99
10	05 56 32.89	25.378	24 29 42.5	32.42	10	07 57 32.96	24.576	24 00 04.2	43.44
11	05 59 05.20	25.391	24 32 52.2	30.81	11	08 00 00.28	24.531	23 55 30.2	44.89
12	06 01 37.58	25.402	24 35 52.2	29.20	12	08 02 27.33	24.486	23 51 05.5	46.32
13	06 04 10.02	25.412	24 38 42.6	27.58	13	08 04 54.11	24.440	23 46 23.3	47.73
14	06 06 42.52	25.420	24 41 23.2	25.97	14	08 07 20.61	24.393	23 41 32.0	49.14
15	06 09 15.06	25.427	24 43 54.2	24.35	15	08 09 46.83	24.346	23 36 33.3	50.54
16	06 11 47.64	25.433	24 46 15.4	22.72	16	08 12 12.76	24.297	23 31 21.2	51.93
17	06 14 20.25	25.438	24 48 26.8	21.09	17	08 14 38.39	24.248	23 26 10.5	53.30
18	06 16 52.89	25.441	24 50 28.5	19.48	18	08 17 03.73	24.198	23 20 40.6	54.67
19	06 19 25.54	25.443	24 52 20.5	17.86	19	08 19 28.77	24.148	23 15 14.2	56.03
20	06 21 58.21	25.444	24 54 02.8	16.23	20	08 21 53.50	24.096	23 09 34.3	57.37
21	06 24 30.87	25.444	24 55 35.2	14.59	21	08 24 17.92	24.044	23 03 40.1	58.70
22	06 27 03.54	25.443	24 56 57.9	12.97	22	08 26 42.03	23.992	22 57 49.0	60.02
23	06 29 36.19	25.440	24 58 10.8	11.33	23	08 29 05.82	23.938	22 51 45.9	61.33
24	06 32 08.82	25.436	N. 24 59 13.9	09.71	24	08 31 29.29	23.884	N. 22 45 34.0	62.63

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. inrom.
Sunday 5.					Tuesday 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	08 31 29.29	23.884	N. 22 45 34.0	62.63	00	10 19 20.27	21.035	N. 15 40 21.7	109.42
01	08 33 52.43	23.830	22 39 14.4	63.90	01	10 21 26.31	20.978	15 29 23.2	110.07
02	08 36 15.25	23.775	22 32 47.2	65.18	02	10 23 32.01	20.922	15 18 20.9	110.71
03	08 38 37.73	23.719	22 26 12.3	66.43	03	10 25 37.37	20.865	15 07 14.7	111.33
04	08 40 59.88	23.663	22 19 30.0	67.68	04	10 27 42.39	20.809	14 56 04.9	111.94
05	08 43 21.69	23.607	22 12 40.2	68.92	05	10 29 47.08	20.755	14 44 51.4	112.54
06	08 45 43.16	23.550	22 05 43.0	70.14	06	10 31 51.45	20.700	14 33 34.4	113.13
07	08 48 04.29	23.493	21 58 38.5	71.34	07	10 33 55.48	20.645	14 22 13.8	113.71
08	08 50 25.07	23.434	21 51 26.9	72.53	08	10 35 59.19	20.591	14 10 49.9	114.27
09	08 52 45.50	23.377	21 44 08.1	73.72	09	10 38 02.57	20.538	13 59 22.6	114.83
10	08 55 05.59	23.318	21 36 42.2	74.89	10	10 40 05.64	20.485	13 47 52.0	115.36
11	08 57 25.32	23.258	21 29 09.4	76.05	11	10 42 08.39	20.432	13 36 18.3	115.88
12	08 59 44.69	23.199	21 21 29.6	77.20	12	10 44 10.82	20.379	13 24 41.4	116.40
13	09 02 03.71	23.140	21 13 43.0	78.33	13	10 46 12.94	20.328	13 13 01.5	116.90
14	09 04 22.37	23.080	21 05 49.7	79.43	14	10 48 14.76	20.277	13 01 18.6	117.39
15	09 06 40.67	23.020	20 57 49.8	80.54	15	10 50 16.26	20.226	12 49 32.8	117.88
16	09 08 58.61	22.960	20 49 43.2	81.64	16	10 52 17.47	20.176	12 37 44.1	118.34
17	09 11 16.19	22.900	20 41 30.1	82.72	17	10 54 18.37	20.126	12 25 52.7	118.79
18	09 13 33.41	22.839	20 33 10.6	83.78	18	10 56 18.98	20.078	12 13 58.6	119.24
19	09 15 50.26	22.778	20 24 44.8	84.83	19	10 58 19.30	20.028	12 02 01.8	119.68
20	09 18 06.74	22.717	20 16 12.7	85.87	20	11 00 19.32	19.980	11 50 02.5	120.10
21	09 20 22.86	22.657	20 07 34.4	86.89	21	11 02 19.06	19.933	11 38 00.6	120.52
22	09 22 38.62	22.595	19 58 50.0	87.90	22	11 04 18.51	19.886	11 25 56.3	120.91
23	09 24 54.00	22.533	N. 19 49 59.6	88.89	23	11 06 17.69	19.839	N. 11 13 49.7	121.30
Monday 6.					Wednesday 8.				
00	09 27 09.02	22.473	N. 19 41 03.3	89.88	00	11 08 16.58	19.793	N. 11 01 40.7	121.68
01	09 29 23.67	22.412	19 32 01.1	90.84	01	11 10 15.20	19.748	10 49 29.5	122.04
02	09 31 37.96	22.350	19 22 53.2	91.80	02	11 12 13.55	19.703	10 37 16.2	122.40
03	09 33 51.87	22.288	19 13 39.5	92.75	03	11 14 11.64	19.659	10 25 00.7	122.75
04	09 36 05.42	22.228	19 04 20.2	93.67	04	11 16 09.46	19.615	10 12 43.2	123.08
05	09 38 18.60	22.166	18 54 55.5	94.58	05	11 18 07.02	19.573	10 00 23.7	123.41
06	09 40 31.41	22.105	18 45 25.2	95.49	06	11 20 04.33	19.530	9 48 02.3	123.73
07	09 42 43.86	22.044	18 35 49.6	96.38	07	11 22 01.38	19.488	9 35 39.0	124.03
08	09 44 55.94	21.983	18 26 08.7	97.24	08	11 23 58.19	19.448	9 23 13.9	124.33
09	09 47 07.66	21.923	18 16 22.7	98.10	09	11 25 54.75	19.406	9 10 47.1	124.61
10	09 49 19.01	21.862	18 06 31.5	98.96	10	11 27 51.06	19.366	8 58 18.6	124.88
11	09 51 30.00	21.801	17 56 35.2	99.79	11	11 29 47.14	19.327	8 45 48.5	125.15
12	09 53 40.62	21.740	17 46 34.0	100.61	12	11 31 42.98	19.288	8 33 16.8	125.41
13	09 55 50.88	21.680	17 36 27.9	101.41	13	11 33 38.59	19.250	8 20 43.6	125.65
14	09 58 00.78	21.620	17 26 17.1	102.20	14	11 35 33.98	19.213	8 08 09.0	125.88
15	10 00 10.32	21.561	17 16 01.5	102.99	15	11 37 29.14	19.175	7 55 33.1	126.10
16	10 02 19.51	21.501	17 05 41.2	103.76	16	11 39 24.08	19.138	7 42 55.8	126.33
17	10 04 28.33	21.441	16 55 16.4	104.50	17	11 41 18.80	19.103	7 30 17.2	126.53
18	10 06 36.80	21.383	16 44 47.2	105.24	18	11 43 13.32	19.068	7 17 37.5	126.73
19	10 08 44.92	21.324	16 34 13.5	105.98	19	11 45 07.62	19.033	7 04 56.5	126.92
20	10 10 52.69	21.265	16 23 35.5	106.69	20	11 47 01.72	19.000	6 52 14.5	127.08
21	10 13 00.10	21.207	16 12 53.2	107.39	21	11 48 55.62	18.967	6 39 31.5	127.26
22	10 15 07.17	21.149	16 02 06.8	108.08	22	11 50 49.32	18.934	6 26 47.4	127.42
23	10 17 13.89	21.092	15 51 16.2	108.76	23	11 52 42.83	18.903	6 14 02.4	127.58
24	10 19 20.27	21.035	N. 15 40 21.7	109.42	24	11 54 36.15	18.872	N. 6 01 16.5	127.72

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascens. on.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 9.					Saturday 11.				
	h m s		° ' "			h m s		° ' "	
00	11 54 56.15	18.872	N. 6 01 16.5	127.72	00	13 22 50.27	18.148	S. 4 12 50.9	125.34
01	11 56 29.29	18.841	5 48 29.8	127.85	01	13 24 39.16	18.148	4 25 22.3	125.12
02	11 58 22.24	18.811	5 35 42.3	127.98	02	13 26 28.05	18.150	4 37 52.3	124.89
03	12 00 15.02	18.782	5 22 54.1	128.08	03	13 28 16.96	18.153	4 50 21.0	124.66
04	12 02 07.62	18.753	5 10 05.3	128.19	04	13 30 05.89	18.156	5 02 48.2	124.42
05	12 04 00.05	18.725	4 57 15.8	128.29	05	13 31 54.83	18.159	5 15 14.0	124.17
06	12 05 52.32	18.698	4 44 25.8	128.38	06	13 33 43.80	18.163	5 27 38.2	123.92
07	12 07 44.42	18.671	4 31 35.2	128.47	07	13 35 32.79	18.168	5 40 01.0	123.66
08	12 09 36.37	18.645	4 18 44.2	128.54	08	13 37 21.82	18.174	5 52 22.1	123.38
09	12 11 28.16	18.620	4 05 52.7	128.61	09	13 39 10.88	18.180	6 04 41.6	123.12
10	12 13 19.81	18.595	3 53 00.9	128.67	10	13 40 59.98	18.187	6 16 59.5	122.84
11	12 15 11.30	18.571	3 40 08.7	128.72	11	13 42 49.12	18.194	6 29 15.7	122.56
12	12 17 02.56	18.548	3 27 16.3	128.75	12	13 44 38.31	18.203	6 41 30.2	122.27
13	12 18 53.88	18.525	3 14 23.7	128.78	13	13 46 27.55	18.211	6 53 42.9	121.97
14	12 20 44.96	18.503	3 01 30.9	128.82	14	13 48 16.84	18.220	7 05 53.8	121.67
15	12 22 35.92	18.482	2 48 37.9	128.83	15	13 50 06.10	18.231	7 18 02.9	121.36
16	12 24 26.74	18.460	2 35 44.9	128.83	16	13 51 55.61	18.242	7 30 10.1	121.03
17	12 26 17.44	18.441	2 22 51.9	128.84	17	13 53 45.09	18.253	7 42 15.3	120.71
18	12 28 08.03	18.422	2 09 58.8	128.84	18	13 55 34.64	18.264	7 54 18.6	120.38
19	12 29 58.50	18.403	1 57 05.8	128.83	19	13 57 24.26	18.277	8 06 19.9	120.05
20	12 31 48.86	18.384	1 44 12.9	128.80	20	13 59 13.96	18.290	8 18 19.2	119.71
21	12 33 39.11	18.367	1 31 20.2	128.78	21	14 01 03.74	18.303	8 30 16.4	119.36
22	12 35 29.26	18.350	1 18 27.6	128.74	22	14 02 53.60	18.318	8 42 11.5	119.01
23	12 37 19.31	18.334	1 05 35.3	128.69	23	14 04 43.56	18.333	8 54 04.5	118.65
Friday 10.					Sunday 12.				
	h m s		° ' "			h m s		° ' "	
00	12 39 09.27	18.319	N. 0 52 43.3	128.64	00	14 06 33.60	18.348	S. 9 05 55.3	118.28
01	12 40 59.14	18.304	0 39 51.6	128.58	01	14 08 23.74	18.365	9 17 43.4	117.90
02	12 42 48.92	18.290	0 27 00.3	128.52	02	14 10 13.98	18.382	9 29 30.1	117.53
03	12 44 38.62	18.277	0 14 09.4	128.45	03	14 12 04.32	18.399	9 41 14.1	117.14
04	12 46 28.24	18.264	N. 0 01 18.9	128.37	04	14 13 54.77	18.418	9 52 55.8	116.75
05	12 48 17.79	18.252	S. 0 11 31.0	128.28	05	14 15 45.33	18.436	10 04 35.1	116.34
06	12 50 07.26	18.240	0 24 20.5	128.19	06	14 17 36.00	18.455	10 16 11.0	115.93
07	12 51 56.67	18.229	0 37 09.3	128.09	07	14 19 26.79	18.475	10 27 46.3	115.53
08	12 53 46.01	18.219	0 49 57.6	127.98	08	14 21 17.70	18.495	10 39 18.3	115.12
09	12 55 35.30	18.210	1 02 45.1	127.87	09	14 23 08.73	18.517	10 50 47.7	114.68
10	12 57 24.53	18.202	1 15 32.0	127.75	10	14 24 59.90	18.538	11 02 14.5	114.25
11	12 59 13.72	18.193	1 28 18.1	127.62	11	14 26 51.19	18.560	11 13 38.7	113.82
12	13 01 02.85	18.185	1 41 03.4	127.48	12	14 28 42.62	18.583	11 25 00.3	113.38
13	13 02 51.94	18.179	1 53 47.9	127.34	13	14 30 34.19	18.607	11 36 19.2	112.92
14	13 04 41.00	18.173	2 06 31.5	127.19	14	14 32 25.90	18.630	11 47 35.3	112.46
15	13 06 30.02	18.168	2 19 14.2	127.04	15	14 34 17.75	18.654	11 58 48.7	112.00
16	13 08 19.01	18.163	2 31 56.0	126.88	16	14 36 09.75	18.680	12 09 59.3	111.53
17	13 10 07.97	18.158	2 44 36.7	126.71	17	14 38 01.91	18.706	12 21 07.7	111.05
18	13 11 56.91	18.154	2 57 16.5	126.53	18	14 39 54.22	18.732	12 32 11.9	110.57
19	13 13 45.82	18.152	3 09 55.1	126.35	19	14 41 46.69	18.758	12 43 13.9	110.08
20	13 15 34.73	18.150	3 22 32.7	126.17	20	14 43 39.32	18.786	12 54 12.8	109.58
21	13 17 23.62	18.148	3 35 09.1	125.97	21	14 45 32.12	18.813	13 05 08.8	109.08
22	13 19 12.50	18.148	3 47 44.3	125.76	22	14 47 25.08	18.842	13 16 01.7	108.57
23	13 21 01.39	18.148	4 00 18.2	125.55	23	14 49 18.22	18.872	13 26 51.6	108.05
24	13 22 50.27	18.148	S. 4 12 50.9	125.34	24	14 51 11.54	18.901	S. 13 37 38.3	107.52

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Monday 13.					Wednesday 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	14 51 11.54	18.901	S. 13 37 38.3	107.52	00	16 26 12.69	20.838	S. 20 59 21.2	73.52
01	14 53 05.03	18.931	13 48 21.8	106.99	01	16 28 17.86	20.886	21 06 39.6	72.62
02	14 54 58.71	18.962	13 59 02.2	106.46	02	16 30 23.32	20.934	21 13 52.6	71.70
03	14 56 52.57	18.993	14 09 39.3	105.91	03	16 32 29.07	20.983	21 21 00.0	70.78
04	14 58 46.62	19.024	14 20 13.1	105.35	04	16 34 35.11	21.031	21 28 01.9	69.84
05	15 00 40.86	19.056	14 30 43.5	104.79	05	16 36 41.44	21.079	21 34 58.1	68.89
06	15 02 35.29	19.089	14 41 10.6	104.23	06	16 38 48.06	21.128	21 41 48.6	67.94
07	15 04 29.93	19.123	14 51 34.3	103.66	07	16 40 54.98	21.177	21 48 33.4	66.98
08	15 06 24.76	19.156	15 01 54.5	103.08	08	16 43 02.18	21.224	21 55 12.4	66.02
09	15 08 19.80	19.190	15 12 11.2	102.48	09	16 45 09.67	21.273	22 01 45.6	65.03
10	15 10 15.04	19.225	15 22 24.3	101.88	10	16 47 17.46	21.322	22 08 12.8	64.05
11	15 12 10.50	19.260	15 32 33.8	101.28	11	16 49 25.53	21.370	22 14 34.2	63.06
12	15 14 06.16	19.295	15 42 39.7	100.68	12	16 51 33.90	21.419	22 20 49.5	62.05
13	15 16 02.04	19.332	15 52 41.9	100.06	13	16 53 42.56	21.468	22 26 58.8	61.04
14	15 17 58.14	19.368	16 02 40.4	99.43	14	16 55 51.51	21.517	22 33 02.0	60.02
15	15 19 54.46	19.405	16 12 35.1	98.80	15	16 58 00.76	21.565	22 38 59.0	58.98
16	15 21 51.00	19.443	16 22 26.0	98.17	16	17 00 10.29	21.613	22 44 49.8	57.94
17	15 23 47.77	19.481	16 32 13.1	97.52	17	17 02 20.12	21.662	22 50 34.3	56.90
18	15 25 44.77	19.519	16 41 56.2	96.86	18	17 04 30.23	21.710	22 56 12.6	55.84
19	15 27 42.00	19.558	16 51 35.4	96.20	19	17 06 40.64	21.758	23 01 44.4	54.78
20	15 29 39.46	19.597	17 01 10.6	95.53	20	17 08 51.33	21.806	23 07 09.9	53.70
21	15 31 37.16	19.637	17 10 41.8	94.85	21	17 11 02.31	21.854	23 12 28.8	52.62
22	15 33 35.10	19.677	17 20 08.8	94.16	22	17 13 13.58	21.903	23 17 41.3	51.53
23	15 35 33.28	19.718	S. 17 29 31.7	93.48	23	17 15 25.14	21.950	S. 23 22 47.1	50.43
Tuesday 14.					Thursday 16.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	15 37 31.71	19.758	S. 17 38 50.5	92.78	00	17 17 36.98	21.998	S. 23 27 46.4	49.33
01	15 39 30.38	19.799	17 48 05.0	92.07	01	17 19 49.11	22.045	23 32 39.0	48.20
02	15 41 29.30	19.842	17 57 15.3	91.35	02	17 22 01.52	22.092	23 37 24.8	47.07
03	15 43 28.48	19.884	18 06 21.2	90.63	03	17 24 14.21	22.138	23 42 03.8	45.93
04	15 45 27.91	19.926	18 15 22.8	89.89	04	17 26 27.18	22.185	23 46 36.0	44.79
05	15 47 27.59	19.968	18 24 19.9	89.15	05	17 28 40.43	22.231	23 51 01.3	43.63
06	15 49 27.53	20.012	18 33 12.6	88.41	06	17 30 53.95	22.277	23 55 19.6	42.48
07	15 51 27.73	20.055	18 42 00.8	87.65	07	17 33 07.75	22.323	23 59 31.0	41.31
08	15 53 28.19	20.099	18 50 44.4	86.88	08	17 35 21.82	22.368	24 03 35.3	40.13
09	15 55 28.92	20.144	18 59 23.4	86.11	09	17 37 36.17	22.413	24 07 32.6	38.95
10	15 57 29.92	20.188	19 07 57.7	85.33	10	17 39 50.78	22.458	24 11 22.7	37.75
11	15 59 31.18	20.233	19 16 27.3	84.54	11	17 42 05.66	22.503	24 15 05.6	36.55
12	16 01 32.71	20.278	19 24 52.2	83.74	12	17 44 20.81	22.547	24 18 41.3	35.34
13	16 03 34.51	20.323	19 33 12.2	82.93	13	17 46 36.22	22.590	24 22 09.7	34.12
14	16 05 36.59	20.369	19 41 27.4	82.13	14	17 48 51.89	22.633	24 25 30.7	32.88
15	16 07 38.94	20.414	19 49 37.7	81.31	15	17 51 07.82	22.676	24 28 44.3	31.65
16	16 09 41.56	20.461	19 57 43.1	80.48	16	17 53 24.00	22.718	24 31 50.5	30.42
17	16 11 44.47	20.508	20 05 43.4	79.63	17	17 55 40.43	22.759	24 34 49.3	29.17
18	16 13 47.65	20.553	20 13 38.7	78.79	18	17 57 57.11	22.801	24 37 40.5	27.90
19	16 15 51.11	20.601	20 21 28.9	77.93	19	18 00 14.04	22.842	24 40 24.1	26.64
20	16 17 54.86	20.648	20 29 13.9	77.07	20	18 02 31.21	22.882	24 43 00.2	25.37
21	16 19 58.89	20.695	20 36 53.7	76.19	21	18 04 48.62	22.922	24 45 28.5	24.08
22	16 22 03.20	20.743	20 44 28.2	75.31	22	18 07 06.27	22.961	24 47 49.2	22.80
23	16 24 07.80	20.791	20 51 57.4	74.42	23	18 09 24.15	22.999	24 50 02.1	21.50
24	16 26 12.69	20.838	S. 20 59 21.2	73.52	24	18 11 42.26	23.038	S. 24 52 07.2	20.20

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Friday 17.					Sunday 19.				
	h m s		° ' "			h m s		° ' "	
00	18 11 42.26	23.758	S 24 52 07.2	20.20	00	20 05 17.87	23.979	S. 25 48 58.0	47.72
01	18 14 00.50	23.775	24 54 04.5	18.89	01	20 07 41.74	23.978	23 44 07.4	49.17
02	18 16 19.16	23.111	24 55 53.9	17.58	02	20 10 05.61	23.977	23 39 08.0	50.63
03	18 18 37.94	23.148	24 57 35.4	16.25	03	20 12 29.46	23.977	23 33 59.9	52.07
04	18 20 56.94	23.184	24 59 08.9	14.92	04	20 14 53.29	23.970	23 28 43.2	53.50
05	18 23 16.15	23.218	25 00 34.4	13.58	05	20 17 17.10	23.966	23 23 17.9	54.94
06	18 25 35.56	23.253	25 01 51.9	12.24	06	20 19 40.88	23.961	23 17 43.9	56.39
07	18 27 55.18	23.287	25 03 01.3	10.89	07	20 22 04.63	23.955	23 12 01.2	57.83
08	18 30 15.00	23.320	25 04 02.6	09.54	08	20 24 28.34	23.948	23 06 10.0	59.25
09	18 32 35.02	23.352	25 04 55.8	08.18	09	20 26 52.01	23.942	23 00 10.2	60.68
10	18 34 55.22	23.383	25 05 40.8	06.81	10	20 29 15.64	23.933	22 54 01.9	62.09
11	18 37 15.61	23.414	25 06 17.5	05.43	11	20 31 39.21	23.924	22 47 45.1	63.52
12	18 39 36.19	23.445	25 06 46.0	04.06	12	20 34 02.73	23.915	22 41 19.7	64.93
13	18 41 56.95	23.474	25 07 06.2	02.68	13	20 36 26.19	23.904	22 34 45.9	66.34
14	18 44 17.88	23.503	25 07 18.1	01.29	14	20 38 49.58	23.893	22 28 03.6	67.75
15	18 46 38.98	23.530	25 07 21.7	00.11	15	20 41 12.91	23.882	22 21 12.9	69.14
16	18 49 00.24	23.557	25 07 16.8	01.51	16	20 43 36.16	23.869	22 14 13.9	70.54
17	18 51 21.66	23.583	25 07 03.6	02.91	17	20 45 59.34	23.857	22 07 06.4	71.93
18	18 53 43.24	23.609	25 06 41.9	04.32	18	20 48 22.44	23.843	21 59 50.7	73.31
19	18 56 04.97	23.633	25 06 11.8	05.73	19	20 50 45.45	23.828	21 52 26.7	74.68
20	18 58 26.84	23.658	25 05 33.2	07.14	20	20 53 08.38	23.813	21 44 54.5	76.05
21	19 00 48.86	23.681	25 04 46.1	08.57	21	20 55 31.21	23.798	21 37 14.1	77.42
22	19 03 11.01	23.703	25 03 50.4	09.99	22	20 57 53.95	23.782	21 29 21.5	78.78
23	19 05 33.29	23.724	S. 25 02 46.2	11.42	23	21 00 16.59	23.765	S. 21 21 28.7	80.13
Saturday 18.					Monday 20.				
	h m s		° ' "			h m s		° ' "	
00	19 07 55.70	23.745	S. 25 01 33.4	12.85	00	21 02 39.13	23.748	S. 21 13 43.9	81.47
01	19 10 18.23	23.765	25 00 12.0	14.28	01	21 05 01.56	23.730	21 05 11.1	82.81
02	19 12 40.88	23.783	24 58 42.0	15.73	02	21 07 23.89	23.712	20 56 21.2	84.14
03	19 15 03.63	23.802	24 57 03.3	17.17	03	21 09 46.10	23.692	20 48 21.4	85.46
04	19 17 26.50	23.819	24 55 16.0	18.60	04	21 12 08.19	23.673	20 39 44.7	86.78
05	19 19 49.46	23.835	24 53 20.1	20.05	05	21 14 30.17	23.653	20 31 01.1	88.08
06	19 22 12.52	23.850	24 51 15.4	21.51	06	21 16 52.03	23.633	20 22 07.7	89.38
07	19 24 35.66	23.865	24 49 02.0	22.95	07	21 19 13.76	23.612	20 13 07.7	90.66
08	19 26 58.90	23.879	24 46 40.0	24.40	08	21 21 35.37	23.591	20 03 51.8	91.93
09	19 29 22.51	23.891	24 44 09.2	25.86	09	21 23 56.85	23.569	19 54 44.4	93.21
10	19 31 45.59	23.903	24 41 29.7	27.31	10	21 26 18.20	23.548	19 45 21.3	94.48
11	19 34 09.05	23.915	24 38 41.5	28.77	11	21 28 39.42	23.525	19 35 50.7	95.73
12	19 36 32.57	23.925	24 35 44.5	30.23	12	21 31 00.50	23.502	19 26 12.1	96.97
13	19 38 56.15	23.934	24 32 38.8	31.68	13	21 33 21.44	23.479	19 16 27.2	98.20
14	19 41 19.78	23.943	24 29 24.3	33.14	14	21 35 42.25	23.456	19 06 34.2	99.43
15	19 43 43.46	23.950	24 26 01.1	34.61	15	21 38 02.91	23.432	18 56 21.2	100.63
16	19 46 07.18	23.957	24 22 29.0	36.07	16	21 40 23.43	23.408	18 46 07.7	101.83
17	19 48 30.94	23.963	24 18 48.3	37.52	17	21 42 43.80	23.383	18 36 02.2	103.03
18	19 50 54.75	23.968	24 14 58.8	38.98	18	21 45 04.02	23.358	18 25 50.3	104.21
19	19 53 18.55	23.972	24 11 00.5	40.44	19	21 47 24.10	23.334	18 15 27.5	105.38
20	19 55 42.39	23.975	24 06 53.5	41.90	20	21 49 44.03	23.309	18 04 41.8	106.53
21	19 58 06.25	23.978	24 02 37.7	43.36	21	21 52 03.81	23.283	17 54 03.1	107.69
22	20 00 30.12	23.978	23 58 13.2	44.81	22	21 54 23.43	23.258	17 43 12.5	108.83
23	20 02 53.99	23.979	23 53 40.0	46.27	23	21 56 42.90	23.233	17 32 17.2	109.95
24	20 05 17.87	23.979	S. 23 48 58.0	47.72	24	21 59 02.22	23.207	S. 17 21 14.1	111.07

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Tuesday 21.					Thursday 23.				
	h m s	s	° ' " "			h m s	s	° ' " "	
00	21 59 02.22	23.207	S. 17 21 14.1	111.07	00	23 47 33.80	22.103	S. 6 44 32.5	148.73
01	22 01 21.38	23.181	17 10 04.4	112.17	01	23 49 46.37	22.088	6 29 38.8	149.15
02	22 03 40.39	23.155	16 58 48.1	113.27	02	23 51 58.85	22.073	6 14 42.7	149.56
03	22 05 59.24	23.128	16 47 25.2	114.35	03	23 54 11.24	22.059	5 59 44.1	149.95
04	22 08 17.93	23.103	16 35 55.9	115.41	04	23 56 23.56	22.047	5 44 43.3	150.33
05	22 10 36.47	23.077	16 24 20.3	116.46	05	23 58 35.80	22.033	5 29 40.2	150.68
06	22 12 54.85	23.050	16 12 38.4	117.51	06	00 00 47.96	22.021	5 14 35.1	151.02
07	22 15 13.07	23.023	16 00 50.2	118.54	07	00 03 00.05	22.010	4 59 28.0	151.35
08	22 17 31.13	22.998	15 48 55.9	119.55	08	00 05 12.08	21.999	4 44 18.9	151.66
09	22 19 49.04	22.971	15 36 55.6	120.56	09	00 07 24.04	21.988	4 29 08.1	151.95
10	22 22 06.78	22.944	15 24 49.2	121.55	10	00 09 35.94	21.978	4 13 55.5	152.23
11	22 24 24.37	22.918	15 12 37.0	122.53	11	00 11 47.78	21.968	3 58 41.3	152.49
12	22 26 41.80	22.892	15 00 18.9	123.50	12	00 13 59.56	21.959	3 43 25.6	152.73
13	22 28 59.07	22.866	14 47 55.0	124.45	13	00 16 11.29	21.952	3 28 08.5	152.97
14	22 31 16.19	22.840	14 35 25.5	125.38	14	00 18 22.98	21.944	3 12 50.0	153.18
15	22 33 33.15	22.813	14 22 50.4	126.31	15	00 20 34.62	21.938	2 57 30.3	153.38
16	22 35 49.95	22.788	14 10 09.8	127.23	16	00 22 46.23	21.931	2 42 09.4	153.57
17	22 38 06.60	22.763	13 57 23.7	128.13	17	00 24 57.79	21.925	2 26 47.5	153.73
18	22 40 23.10	22.737	13 44 32.3	129.01	18	00 27 09.33	21.920	2 11 24.6	153.88
19	22 42 39.44	22.712	13 31 35.6	129.88	19	00 29 20.83	21.915	1 56 00.9	154.02
20	22 44 55.64	22.687	13 18 33.8	130.73	20	00 31 32.31	21.911	1 40 36.4	154.13
21	22 47 11.68	22.661	13 05 26.8	131.58	21	00 33 43.76	21.908	1 25 11.3	154.23
22	22 49 27.57	22.636	12 52 14.8	132.41	22	00 35 55.20	21.906	1 09 45.6	154.33
23	22 51 43.31	22.611	S. 12 38 57.9	133.22	23	00 38 06.63	21.903	S. 0 54 19.4	154.40
Wednesday 22.					Friday 24.				
00	22 53 58.90	22.587	S. 12 25 36.2	134.02	00	00 40 18.04	21.902	S. 0 38 52.8	154.46
01	22 56 14.35	22.563	12 12 09.7	134.81	01	00 42 29.45	21.901	0 23 25.9	154.49
02	22 58 29.65	22.538	11 58 38.5	135.58	02	00 44 40.85	21.900	S. 0 07 58.9	154.52
03	23 00 44.81	22.515	11 45 02.8	136.33	03	00 46 52.25	21.901	N. 0 07 28.3	154.53
04	23 02 59.83	22.492	11 31 22.5	137.08	04	00 49 03.66	21.903	0 22 55.4	154.51
05	23 05 14.71	22.468	11 17 37.9	137.80	05	00 51 15.08	21.904	0 38 22.4	154.49
06	23 07 29.45	22.446	11 03 48.9	138.52	06	00 53 26.51	21.906	0 53 49.3	154.46
07	23 09 44.06	22.423	10 49 55.7	139.21	07	00 55 37.95	21.909	1 09 15.9	154.39
08	23 11 58.53	22.401	10 35 58.4	139.89	08	00 57 49.42	21.913	1 24 42.0	154.32
09	23 14 12.87	22.380	10 21 57.0	140.56	09	01 00 00.91	21.917	1 40 07.7	154.24
10	23 16 27.09	22.358	10 07 51.7	141.21	10	01 02 12.42	21.922	1 55 32.9	154.13
11	23 18 41.17	22.337	9 53 42.5	141.85	11	01 04 23.97	21.928	2 10 57.3	154.01
12	23 20 55.13	22.317	9 39 29.5	142.48	12	01 06 35.55	21.933	2 26 21.0	153.88
13	23 23 08.97	22.296	9 25 12.8	143.08	13	01 08 47.17	21.940	2 41 43.8	153.73
14	23 25 22.68	22.276	9 10 52.5	143.67	14	01 10 58.83	21.948	2 57 05.7	153.56
15	23 27 36.28	22.257	8 56 28.8	144.24	15	01 13 10.54	21.956	3 12 26.5	153.38
16	23 29 49.76	22.238	8 42 01.6	144.81	16	01 15 22.30	21.965	3 27 46.2	153.18
17	23 32 03.14	22.220	8 27 31.1	145.35	17	01 17 34.12	21.974	3 43 04.7	152.97
18	23 34 16.40	22.201	8 12 57.4	145.88	18	01 19 45.99	21.984	3 58 21.8	152.73
19	23 36 29.55	22.183	7 58 20.5	146.40	19	01 21 57.93	21.995	4 13 37.5	152.48
20	23 38 42.60	22.167	7 43 40.6	146.89	20	01 24 09.93	22.006	4 28 51.6	152.23
21	23 40 55.55	22.149	7 28 57.8	147.38	21	01 26 22.00	22.018	4 44 04.2	151.96
22	23 43 08.39	22.133	7 14 12.1	147.85	22	01 28 34.14	22.030	4 59 15.1	151.66
23	23 45 21.14	22.118	6 59 23.6	148.30	23	01 30 46.36	22.043	5 14 24.1	151.35
24	23 47 33.80	22.103	S. 6 44 32.5	148.73	24	01 32 58.66	22.057	N. 5 29 31.3	151.03

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Saturday 25.					Monday 27.				
	h m s		° ' "			h m s		° ' "	
00	01 32 58.66	22.057	N. 5 29 31.3	151.03	00	03 21 29.51	23.329	N. 16 28 30.6	117.94
01	01 35 11.54	22.072	5 44 36.5	150.69	01	03 23 49.59	23.365	16 40 15.2	116.91
02	01 37 23.52	22.087	5 59 39.6	150.33	02	03 26 09.89	23.401	16 51 53.5	115.85
03	01 39 36.08	22.103	6 14 40.5	149.97	03	03 28 30.40	23.436	17 03 25.4	114.79
04	01 41 48.75	22.119	6 29 39.2	149.58	04	03 30 51.12	23.471	17 14 51.0	113.72
05	01 44 01.51	22.135	6 44 35.5	149.18	05	03 33 12.05	23.507	17 26 10.1	112.63
06	01 46 14.37	22.153	6 59 29.4	148.77	06	03 35 33.20	23.543	17 37 22.6	111.53
07	01 48 27.34	22.171	7 14 20.7	148.33	07	03 37 54.56	23.578	17 48 28.5	110.42
08	01 50 40.42	22.190	7 29 09.4	147.89	08	03 40 16.14	23.614	17 59 27.6	109.29
09	01 52 53.62	22.209	7 43 55.4	147.43	09	03 42 37.93	23.650	18 10 20.0	108.16
10	01 55 06.93	22.228	7 58 38.5	146.95	10	03 44 59.94	23.686	18 21 05.5	107.01
11	01 57 20.36	22.249	8 13 18.8	146.46	11	03 47 22.16	23.721	18 31 44.1	105.85
12	01 59 33.92	22.270	8 27 56.0	145.95	12	03 49 44.59	23.757	18 42 15.7	104.68
13	02 01 47.60	22.292	8 42 30.2	145.43	13	03 52 07.24	23.793	18 52 40.2	103.49
14	02 04 01.42	22.314	8 57 01.1	144.88	14	03 54 30.10	23.828	19 02 57.6	102.29
15	02 06 15.37	22.336	9 11 28.8	144.34	15	03 56 53.17	23.863	19 13 07.7	101.08
16	02 08 29.45	22.359	9 25 53.2	143.77	16	03 59 16.46	23.899	19 23 10.5	99.86
17	02 10 43.68	22.383	9 40 14.0	143.18	17	04 01 39.66	23.933	19 33 06.0	98.63
18	02 12 58.05	22.408	9 54 31.4	142.59	18	04 04 03.66	23.968	19 42 54.0	97.38
19	02 15 12.57	22.433	10 08 45.1	141.98	19	04 06 27.58	24.003	19 52 34.5	96.13
20	02 17 27.24	22.458	10 22 55.1	141.34	20	04 08 51.70	24.038	20 02 07.5	94.86
21	02 19 42.06	22.483	10 37 01.2	140.70	21	04 11 16.03	24.073	20 11 32.8	93.58
22	02 21 57.03	22.509	10 51 03.5	140.05	22	04 13 40.57	24.107	20 20 50.5	92.30
23	02 24 12.17	22.537	N. 11 05 01.8	139.38	23	04 16 05.31	24.140	N. 20 30 00.4	90.99
Sunday 26.					Tuesday 28.				
	h m s		° ' "			h m s		° ' "	
00	02 26 27.47	22.563	N. 11 18 56.0	138.69	00	04 18 30.25	24.173	N. 20 39 02.4	89.68
01	02 28 42.93	22.591	11 32 46.1	137.99	01	04 20 55.39	24.207	20 47 56.0	88.37
02	02 30 58.56	22.619	11 46 31.9	137.27	02	04 23 20.73	24.240	20 56 42.5	87.03
03	02 33 14.36	22.648	12 00 13.3	136.54	03	04 25 46.27	24.273	21 05 21.0	85.69
04	02 35 30.33	22.677	12 13 50.4	135.80	04	04 28 12.00	24.304	21 13 51.1	84.34
05	02 37 46.48	22.706	12 27 22.9	135.04	05	04 30 37.92	24.335	21 22 13.1	82.98
06	02 40 02.80	22.736	12 40 50.9	134.27	06	04 33 04.02	24.367	21 30 26.0	81.61
07	02 42 19.31	22.767	12 54 14.1	133.48	07	04 35 30.32	24.398	21 38 32.4	80.23
08	02 44 36.00	22.797	13 07 32.6	132.68	08	04 37 56.79	24.428	21 46 20.0	78.85
09	02 46 52.87	22.828	13 20 46.2	131.86	09	04 40 23.45	24.458	21 54 18.0	77.45
10	02 49 09.93	22.859	13 33 54.9	131.03	10	04 42 50.28	24.487	22 01 57.1	76.04
11	02 51 27.18	22.891	13 46 58.6	130.18	11	04 45 17.29	24.516	22 09 31.1	74.63
12	02 53 44.62	22.923	13 59 57.1	129.33	12	04 47 44.47	24.544	22 16 54.0	73.20
13	02 56 02.26	22.956	14 12 50.5	128.45	13	04 50 11.82	24.572	22 24 00.0	71.78
14	02 58 20.09	22.988	14 25 38.5	127.56	14	04 52 39.33	24.599	22 31 15.0	70.33
15	03 00 38.12	23.021	14 38 21.2	126.67	15	04 55 07.01	24.626	22 38 10.0	68.88
16	03 02 56.34	23.054	14 50 58.5	125.75	16	04 57 34.84	24.651	22 45 00.0	67.43
17	03 05 14.77	23.088	15 03 30.2	124.83	17	05 00 02.82	24.676	22 51 42.1	65.97
18	03 07 33.40	23.123	15 15 56.4	123.88	18	05 02 30.95	24.701	22 58 14.0	64.49
19	03 09 52.24	23.157	15 28 16.8	122.92	19	05 04 59.23	24.725	23 04 30.0	63.02
20	03 12 11.28	23.190	15 40 31.4	121.95	20	05 07 27.65	24.748	23 10 50.0	61.55
21	03 14 30.52	23.224	15 52 40.2	120.97	21	05 09 56.20	24.770	23 16 54.0	60.03
22	03 16 49.97	23.260	16 04 43.0	119.98	22	05 12 24.89	24.793	23 22 50.0	58.53
23	03 19 09.64	23.295	16 16 39.9	118.97	23	05 14 53.71	24.813	23 28 30.0	57.03
24	03 21 29.51	23.329	N. 16 28 30.6	117.94	24	05 17 22.65	24.833	N. 23 34 15.0	55.53

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
Wednesday 29.									
	h m s	s	° ' "	"					
00	05 17 22.65	24.833	N. 23 34 15.0	55.53					
01	05 19 51.71	24.853	23 39 43.6	54.01					
02	05 22 20.88	24.872	23 45 03.1	52.48					
03	05 24 50.17	24.889	23 50 13.4	50.95					
04	05 27 19.55	24.906	23 55 14.5	49.42					
05	05 29 49.04	24.922	24 00 06.4	47.88					
06	05 32 18.61	24.937	24 04 49.0	46.33					
07	05 34 48.28	24.952	24 09 22.4	44.78					
08	05 37 18.03	24.964	24 13 46.4	43.23					
09	05 39 47.85	24.977	24 18 01.2	41.68					
10	05 42 17.75	24.988	24 22 06.6	40.12					
11	05 44 47.71	24.999	24 26 02.6	38.55					
12	05 47 17.74	25.009	24 29 49.2	36.98					
13	05 49 47.82	25.018	24 33 26.4	35.42					
14	05 52 17.95	25.025	24 36 54.2	33.84					
15	05 54 48.12	25.032	24 40 12.5	32.27					
16	05 57 18.33	25.037	24 43 21.4	30.69					
17	05 59 48.56	25.042	24 46 20.8	29.11					
18	06 02 18.83	25.046	24 49 10.7	27.53					
19	06 04 49.11	25.048	24 51 51.1	25.95					
20	06 07 19.40	25.048	24 54 22.1	24.37					
21	06 09 49.69	25.049	24 56 43.5	22.78					
22	06 12 19.99	25.049	24 58 55.4	21.19					
23	06 14 50.28	25.048	N. 25 00 57.8	19.60					
Thursday, MARCH 1.									
00	06 17 20.56	25.045	N. 25 02 50.6	18.01					

PHASES OF THE MOON.

							h m
Feb. 5	○ Full Moon	..	..	..	..	..	20 11.0
" 13	☾ Last Quarter	..	..	..	..	..	19 05.0
" 21	☉ New Moon	..	..	..	..	..	09 40.8
" 28	☽ First Quarter	..	..	..	..	..	03 20.6
							h
Feb. 12	☾ Apogee	..	..	..	..	..	16.1
" 24	☾ Perigee	..	..	..	..	..	11.5

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semi- diameter passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Var. in 1 hour.
		Apparent Right Ascension	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.			
		h m s	s	° ' "	"	m s	m s	s
Thur.	1	22 48 41.60	9.363	S. 7 33 51.0	56.99	1 05.39	12 29.66	0.492
Frid.	2	22 52 26.04	9.341	7 11 00.0	57.25	1 05.32	12 17.58	0.514
Sat.	3	22 56 09.98	9.321	6 48 03.1	57.49	1 05.25	12 05.00	0.534
Sun.	4	22 59 53.43	9.301	6 25 00.5	57.72	1 05.18	11 51.94	0.554
Mon.	5	23 03 36.43	9.282	6 01 52.7	57.93	1 05.12	11 38.42	0.572
Tues.	6	23 07 19.00	9.265	5 38 40.0	58.13	1 05.05	11 24.47	0.590
Wed.	7	23 11 01.14	9.248	5 15 22.7	58.31	1 04.99	11 10.11	0.607
Thur.	8	23 14 42.90	9.232	4 52 01.4	58.47	1 04.94	10 55.35	0.623
Frid.	9	23 18 24.29	9.217	4 28 36.2	58.62	1 04.88	10 40.23	0.637
Sat.	10	23 22 05.34	9.203	4 05 07.5	58.76	1 04.83	10 24.76	0.651
Sun.	11	23 25 46.06	9.190	3 41 35.8	58.88	1 04.78	10 08.72	0.664
Mon.	12	23 29 26.48	9.178	3 18 01.4	58.99	1 04.74	9 52.21	0.676
Tues.	13	23 33 06.62	9.167	2 54 24.6	59.08	1 04.70	9 36.12	0.688
Wed.	14	23 36 46.50	9.157	2 30 45.9	59.15	1 04.66	9 19.89	0.698
Thur.	15	23 40 26.15	9.147	2 07 05.5	59.21	1 04.62	9 03.12	0.707
Frid.	16	23 44 05.57	9.139	1 43 23.8	59.26	1 04.59	8 45.15	0.716
Sat.	17	23 47 44.80	9.131	1 19 41.2	59.29	1 04.56	8 28.11	0.724
Sun.	18	23 51 23.85	9.124	0 55 58.1	59.30	1 04.53	8 11.11	0.731
Mon.	19	23 55 02.74	9.117	0 32 14.8	59.30	1 04.51	7 53.11	0.737
Tues.	20	23 58 41.49	9.112	S. 0 08 31.8	59.28	1 04.48	7 35.55	0.743
Wed.	21	00 02 20.11	9.107	N. 0 15 10.7	59.25	1 04.47	7 17.11	0.747
Thur.	22	00 05 58.63	9.103	0 38 52.2	59.20	1 04.45	6 59.08	0.752
Frid.	23	00 09 37.04	9.099	1 02 32.2	59.13	1 04.44	6 41.08	0.755
Sat.	24	00 13 15.38	9.096	1 26 10.5	59.05	1 04.43	6 23.07	0.758
Sun.	25	00 16 53.66	9.094	1 49 46.6	58.95	1 04.43	6 05.07	0.761
Mon.	26	00 20 31.89	9.092	2 13 20.1	58.84	1 04.42	5 47.07	0.762
Tues.	27	00 24 10.09	9.092	2 36 50.7	58.71	1 04.42	5 28.02	0.763
Wed.	28	00 27 48.29	9.092	3 00 18.0	58.56	1 04.43	5 10.02	0.763
Thur.	29	00 31 26.50	9.093	3 23 41.7	58.40	1 04.43	4 52.01	0.762
Frid.	30	00 35 04.74	9.094	3 47 01.3	58.23	1 04.44	4 34.01	0.760
Sat.	31	00 38 43.04	9.097	4 10 16.6	58.04	1 04.45	4 15.01	0.757
Sun.	32	00 42 21.41	9.101	N. 4 33 27.2	57.84	1 04.47	3 57.03	0.754

* Mean Time of the Semidiameter passing may be found by subtracting 0^s.18 from the Sidereal Time

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*		
		h m s	° ' "	' "	m s	h m s
Thur.	1	22 48 39.65	S. 7 34 02.8	16 09.78	12 29.76	22 36 09.88
Frid.	2	22 52 24.12	7 11 11.8	16 09.54	12 17.69	22 40 06.44
Sat.	3	22 56 08.10	6 48 14.7	16 09.30	12 05.11	22 44 02.99
Sun.	4	22 59 51.59	6 25 11.9	16 09.06	11 52.05	22 47 59.54
Mon.	5	23 03 34.63	6 02 03.9	16 08.81	11 38.53	22 51 56.10
Tues.	6	23 07 17.23	5 38 51.0	16 08.56	11 24.58	22 55 52.65
Wed.	7	23 10 59.42	5 15 33.6	16 08.31	11 10.22	22 59 49.20
Thur.	8	23 14 41.22	4 52 12.0	16 08.05	10 55.46	23 03 45.76
Frid.	9	23 18 22.65	4 28 46.6	16 07.79	10 40.34	23 07 42.31
Sat.	10	23 22 03.74	4 05 17.7	16 07.53	10 24.88	23 11 38.86
Sun.	11	23 25 44.51	3 41 45.8	16 07.27	10 09.09	23 15 35.42
Mon.	12	23 29 24.97	3 18 11.1	16 07.00	9 53.00	23 19 31.97
Tues.	13	23 33 05.15	2 54 34.1	16 06.73	9 36.63	23 23 28.52
Wed.	14	23 36 45.08	2 30 55.1	16 06.46	9 20.00	23 27 25.08
Thur.	15	23 40 24.77	2 07 14.4	16 06.19	9 03.14	23 31 21.63
Frid.	16	23 44 04.24	1 43 32.5	16 05.91	8 46.05	23 35 18.18
Sat.	17	23 47 43.51	1 19 49.6	16 05.64	8 28.78	23 39 14.74
Sun.	18	23 51 22.61	0 56 06.2	16 05.36	8 11.32	23 43 11.29
Mon.	19	23 55 01.54	0 32 22.6	16 05.09	7 53.70	23 47 07.84
Tues.	20	23 58 40.34	S. 0 08 39.3	16 04.81	7 35.94	23 51 04.39
Wed.	21	00 02 19.00	N. 0 15 03.5	16 04.54	7 18.06	23 55 00.95
Thur.	22	00 05 57.56	0 38 45.2	16 04.26	7 00.06	23 58 57.50
Frid.	23	00 09 36.03	1 02 25.6	16 03.99	6 41.97	00 02 54.05
Sat.	24	00 13 14.41	1 26 04.2	16 03.72	6 23.81	00 06 50.61
Sun.	25	00 16 52.73	1 49 40.6	16 03.45	6 05.57	00 10 47.16
Mon.	26	00 20 31.01	2 13 14.4	16 03.18	5 47.30	00 14 43.71
Tues.	27	00 24 09.26	2 36 45.4	16 02.91	5 29.00	00 18 40.27
Wed.	28	00 27 47.51	3 00 13.0	16 02.64	5 10.69	00 22 36.82
Thur.	29	00 31 25.76	3 23 36.9	16 02.37	4 52.39	00 26 33.37
Frid.	30	00 35 04.05	3 46 56.9	16 02.10	4 34.12	00 30 29.92
Sat.	31	00 38 42.39	4 10 12.5	16 01.82	4 15.91	00 34 26.48
Sun.	32	00 42 20.81	N. 4 33 23.4	16 01.55	3 57.78	00 38 23.03

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Longitude of the Radius Vector of the Earth	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	rh.	rh.	rh.		ch.	rh.	ch.	rh.
	° ' "	"		h m s	° ' "	° ' "	° ' "	° ' "
1	340 40 27.4	N. 0.01	9.9961309	13 23 36.38	15 50.26	15 46.37	58 07.58	57 53.32
2	341 40 37.3	0.12	.9962370	13 19 40.47	15 42.46	15 38.51	57 38.94	57 24.47
3	342 40 45.0	0.22	.9963446	13 15 44.57	15 34.56	15 30.59	57 09.94	56 55.38
4	343 40 50.8	0.29	9.9964538	13 11 48.66	15 26.62	15 22.66	56 40.82	56 26.29
5	344 40 54.6	0.32	.9965645	13 07 52.75	15 18.73	15 14.83	56 11.84	55 57.55
6	345 40 56.5	0.32	.9966768	13 03 56.84	15 11.01	15 07.28	55 43.51	55 29.83
7	346 40 56.6	0.30	9.9967906	13 00 02.94	15 03.68	15 00.26	55 16.63	55 01.08
8	347 40 54.8	0.25	.9969056	12 56 05.43	14 57.07	14 54.14	54 52.34	54 41.60
9	348 40 51.2	0.18	.9970225	12 52 09.12	14 51.53	14 49.29	54 32.02	54 25.61
10	349 40 45.8	N. 0.07	9.9971404	12 48 13.22	14 47.48	14 46.14	54 17.16	54 12.24
11	350 40 38.7	S. 0.01	.9972591	12 44 17.31	14 45.32	14 45.07	54 09.24	54 08.32
12	351 40 29.9	0.14	.9973796	12 40 21.40	14 45.42	14 46.41	54 09.61	54 13.24
13	352 40 19.3	0.26	9.9975007	12 36 25.49	14 48.06	14 50.40	54 19.50	54 27.86
14	353 39 07.0	0.39	.9976226	12 32 29.59	14 53.42	14 57.13	54 38.96	54 52.56
15	354 39 53.1	0.52	.9977451	12 28 33.68	15 01.52	15 06.55	55 08.08	55 27.15
16	355 39 37.4	0.63	9.9978682	12 24 37.77	15 12.10	15 18.37	55 47.84	56 10.53
17	356 39 20.0	0.73	.9979917	12 20 41.87	15 25.02	15 32.04	56 34.94	57 02.72
18	357 39 00.8	0.80	.9981154	12 16 45.96	15 39.32	15 46.73	57 27.45	57 54.62
19	358 38 39.9	0.84	9.9982391	12 12 50.05	15 54.11	16 01.50	58 21.71	58 48.10
20	359 38 17.1	0.86	.9983627	12 08 54.14	16 08.13	16 14.43	59 13.19	59 36.32
21	0 37 52.4	0.85	.9984861	12 04 58.24	16 20.04	16 24.80	59 56.89	60 14.35
22	1 37 25.7	0.80	9.9986093	12 01 02.33	16 28.58	16 31.29	60 28.24	60 57.18
23	2 36 56.9	0.72	.9987321	11 57 06.42	16 32.87	16 33.31	60 43.99	61 15.59
24	3 36 25.9	0.62	.9988546	11 53 10.52	16 32.62	16 30.67	60 43.05	61 20.64
25	4 35 52.7	0.50	9.9989768	11 49 14.61	16 28.15	16 24.58	60 26.66	60 13.57
26	5 35 17.2	0.37	.9990988	11 45 18.70	16 20.30	16 15.45	59 57.85	59 40.14
27	6 34 39.4	0.21	.9992208	11 41 22.79	16 10.17	16 04.59	59 20.65	59 02.20
28	7 33 59.2	S. 0.11	9.9993427	11 37 26.89	15 58.85	15 53.05	58 30.12	58 17.83
29	8 33 10.7	N. 0.01	.9994648	11 33 30.98	15 47.28	15 41.63	57 56.67	57 35.91
30	9 32 31.9	0.10	.9995871	11 29 35.07	15 36.14	15 30.87	57 15.76	56 56.40
31	10 31 44.7	0.17	.9997098	11 25 39.16	15 25.83	15 21.06	56 37.92	56 20.41
32	11 30 55.2	N. 0.21	9.9998328	11 21 43.26	15 16.56	15 12.53	56 03.89	55 48.38

MEAN TIME.

Day of the Month.	THE MOON'S						
	Longitude.		Latitude.		Age.	Meridian Passage.	
	oh.	12h.	oh.	12h.	oh.	Upper.	Lower.
	° ' "	° ' "	° ' "	° ' "	d	h m	h m
1	93 55 44.0	100 42 06.2	N. 1 39 25.4	N. 2 12 24.6	8.60	20 30.9	08 01.9
2	107 25 45.6	114 06 45.6	2 43 17.4	3 11 40.9	9.60	21 27.6	08 59.5
3	120 45 08.0	127 20 52.4	3 37 14.6	3 59 41.2	10.60	22 21.3	09 54.8
4	133 53 56.9	140 24 17.9	4 18 46.6	4 34 20.0	11.60	23 11.6	10 46.9
5	146 51 51.0	153 16 31.1	4 46 13.5	4 54 23.1	12.60	23 58.5	11 35.4
6	159 38 13.2	165 56 53.4	4 58 47.4	4 59 28.7	13.60	* *	12 20.9
7	172 12 29.4	178 25 00.7	4 56 31.5	4 50 03.1	14.60	00 42.6	13 03.9
8	184 34 30.0	190 41 03.2	4 40 13.0	4 27 12.5	15.60	01 24.8	13 45.4
9	196 44 49.3	202 46 01.6	4 11 14.4	3 52 32.3	16.60	02 05.9	14 26.3
10	208 44 56.8	214 41 55.7	3 31 21.1	3 07 56.0	17.60	02 46.9	15 07.6
11	220 37 22.5	226 31 45.2	2 42 32.3	2 15 26.0	18.60	03 28.6	15 50.0
12	232 25 35.1	238 19 26.3	1 46 53.0	1 17 09.0	19.60	04 11.9	16 34.3
13	244 13 55.3	250 09 41.1	N. 0 46 30.5	N. 0 15 13.8	20.60	04 57.4	17 21.1
14	256 07 23.9	262 07 45.4	S. 0 16 24.0	S. 0 48 05.3	21.60	05 45.5	18 10.6
15	268 11 27.3	274 19 10.9	1 19 31.7	1 50 23.6	22.60	06 36.4	19 02.7
16	280 31 36.3	286 49 21.0	2 20 20.3	2 48 59.5	23.60	07 29.4	19 56.5
17	293 12 59.0	299 42 59.2	3 15 57.7	3 40 49.8	24.60	08 23.8	20 51.1
18	306 19 44.0	313 03 28.2	4 03 09.9	4 22 31.4	25.60	09 18.3	21 45.4
19	319 54 16.9	326 52 05.0	4 38 27.5	4 50 32.8	26.60	10 12.2	22 38.8
20	333 56 35.6	341 07 20.2	4 58 23.8	5 01 40.9	27.60	11 05.1	23 31.2
21	348 23 38.4	355 44 39.4	5 00 09.0	4 53 39.2	28.60	11 57.1	* *
22	3 09 23.5	10 36 44.3	4 42 10.4	4 25 48.8	0.15	12 48.7	00 22.9
23	18 05 32.0	25 34 36.4	4 04 49.6	3 39 35.2	1.15	13 40.8	01 14.6
24	33 02 50.1	40 29 11.2	3 10 35.2	2 38 24.8	2.15	14 34.4	02 07.4
25	47 52 45.4	55 12 47.7	2 03 43.4	1 27 12.2	3.15	15 30.1	03 02.0
26	62 28 43.0	69 40 06.1	S. 0 49 33.4	S. 0 11 28.4	4.15	16 27.8	03 58.7
27	76 46 41.3	83 48 21.0	N. 0 26 23.8	N. 1 03 26.8	5.15	17 27.1	04 57.4
28	90 45 05.1	97 36 59.0	1 39 07.8	2 12 57.5	6.15	18 26.3	05 56.8
29	104 24 12.5	111 06 58.1	2 44 30.5	3 13 25.1	7.15	19 23.7	06 55.3
30	117 45 30.5	124 20 04.4	3 39 23.0	4 02 09.2	8.15	20 18.1	07 51.3
31	130 50 55.1	137 18 16.8	4 21 32.4	4 37 23.3	9.15	21 08.8	08 43.9
32	143 42 22.8	150 03 24.5	N. 4 49 36.1	N. 4 58 07.3	10.15	21 56.0	09 32.8

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 1.					Saturday 3.				
	h m s		d m s			h m s		d m s	
00	06 17 20.56	25.045	N. 25 02 50.6	18.01	00	08 15 16.83	23.737	N. 23 31 49.9	53.74
01	06 19 50.82	25.042	25 04 33.9	16.43	01	08 17 39.11	23.688	23 26 23.5	55.06
02	06 22 21.06	25.037	25 06 07.7	14.84	02	08 20 01.09	23.640	23 20 49.2	56.37
03	06 24 51.26	25.030	25 07 32.0	13.25	03	08 22 22.79	23.592	23 15 07.1	57.66
04	06 27 21.42	25.023	25 08 46.7	11.66	04	08 24 44.19	23.543	23 09 17.3	58.94
05	06 29 51.54	25.015	25 09 51.9	10.08	05	08 27 05.30	23.493	23 03 19.8	60.22
06	06 32 21.60	25.006	25 10 47.6	08.49	06	08 29 26.11	23.443	22 57 14.7	61.48
07	06 34 51.61	24.997	25 11 33.8	06.92	07	08 31 46.61	23.392	22 51 02.1	62.73
08	06 37 21.56	24.985	25 12 10.6	05.34	08	08 34 06.81	23.342	22 44 42.0	63.97
09	06 39 51.43	24.973	25 12 37.9	03.76	09	08 36 26.71	23.291	22 38 14.5	65.20
10	06 42 21.23	24.959	25 12 55.7	02.18	10	08 38 46.30	23.238	22 31 39.6	66.42
11	06 44 50.94	24.944	25 13 04.0	00.60	11	08 41 05.57	23.186	22 24 57.5	67.63
12	06 47 20.56	24.929	25 13 02.9	00.97	12	08 43 24.53	23.133	22 18 08.1	68.83
13	06 49 50.09	24.913	25 12 52.4	02.53	13	08 45 43.17	23.081	22 11 11.6	70.00
14	06 52 19.51	24.895	25 12 32.5	04.10	14	08 48 01.50	23.028	22 04 08.1	71.18
15	06 54 48.83	24.877	25 12 03.2	05.67	15	08 50 19.50	22.973	21 56 57.5	72.33
16	06 57 18.03	24.857	25 11 24.5	07.23	16	08 52 37.16	22.920	21 49 40.1	73.48
17	06 59 47.11	24.836	25 10 36.5	08.78	17	08 54 54.54	22.867	21 42 15.7	74.62
18	07 02 16.06	24.813	25 09 39.2	10.32	18	08 57 11.58	22.813	21 34 44.6	75.74
19	07 04 44.87	24.791	25 08 32.7	11.86	19	08 59 28.29	22.758	21 27 06.8	76.86
20	07 07 13.55	24.768	25 07 16.9	13.41	20	09 01 44.67	22.703	21 19 22.3	77.97
21	07 09 42.08	24.743	25 05 51.8	14.94	21	09 04 00.72	22.648	21 11 31.2	79.06
22	07 12 10.46	24.717	25 04 17.6	16.47	22	09 06 16.44	22.593	21 03 33.6	80.14
23	07 14 38.68	24.689	N. 25 02 34.2	18.00	23	09 08 31.83	22.538	N. 20 55 29.5	81.21
Friday 2.					Sunday 4.				
	h m s		d m s			h m s		d m s	
00	07 17 06.73	24.662	N. 25 00 41.6	19.52	00	09 10 46.89	22.483	N. 20 47 19.1	82.26
01	07 19 34.62	24.633	24 58 40.0	21.03	01	09 13 01.62	22.427	20 39 02.4	83.30
02	07 22 02.32	24.603	24 56 29.3	22.53	02	09 15 16.01	22.371	20 30 39.5	84.33
03	07 24 29.85	24.573	24 54 09.6	24.03	03	09 17 30.07	22.316	20 22 10.4	85.35
04	07 26 57.19	24.540	24 51 40.9	25.53	04	09 19 43.80	22.260	20 13 35.3	86.36
05	07 29 24.33	24.508	24 49 03.2	27.02	05	09 21 57.19	22.204	20 04 54.1	87.35
06	07 31 51.28	24.475	24 46 16.7	28.49	06	09 24 10.25	22.149	19 56 07.1	88.33
07	07 34 18.03	24.440	24 43 21.3	29.97	07	09 26 22.98	22.093	19 47 14.2	89.30
08	07 36 44.56	24.405	24 40 17.1	31.43	08	09 28 35.37	22.037	19 38 15.5	90.26
09	07 39 10.89	24.369	24 37 04.1	32.89	09	09 30 47.42	21.982	19 29 11.1	91.21
10	07 41 36.99	24.332	24 33 42.4	34.34	10	09 32 59.15	21.927	19 20 01.0	92.14
11	07 44 02.87	24.294	24 30 12.0	35.79	11	09 35 10.54	21.870	19 10 45.4	93.06
12	07 46 28.52	24.256	24 26 32.9	37.23	12	09 37 21.59	21.815	19 01 24.3	93.97
13	07 48 53.94	24.217	24 22 45.3	38.65	13	09 39 32.32	21.760	18 51 57.8	94.87
14	07 51 19.12	24.176	24 18 49.1	40.07	14	09 41 42.71	21.704	18 42 25.0	95.75
15	07 53 44.05	24.135	24 14 44.5	41.48	15	09 43 52.77	21.648	18 32 48.8	96.62
16	07 56 08.74	24.094	24 10 31.4	42.88	16	09 46 02.49	21.593	18 23 06.5	97.48
17	07 58 33.18	24.052	24 06 09.9	44.27	17	09 48 11.89	21.539	18 13 19.1	98.33
18	08 00 57.36	24.008	24 01 40.2	45.65	18	09 50 20.96	21.484	18 03 26.6	99.16
19	08 03 21.28	23.964	23 57 02.1	47.03	19	09 52 29.70	21.430	17 53 29.2	99.98
20	08 05 44.93	23.920	23 52 15.9	48.38	20	09 54 38.12	21.375	17 43 26.8	100.80
21	08 08 08.32	23.875	23 47 21.5	49.74	21	09 56 46.20	21.321	17 33 19.6	101.59
22	08 10 31.43	23.829	23 42 19.0	51.09	22	09 58 53.97	21.268	17 23 07.7	102.38
23	08 12 54.27	23.783	23 37 08.4	52.43	23	10 01 01.41	21.213	17 12 51.1	103.16
24	08 15 16.83	23.737	N. 23 31 49.9	53.74	24	10 03 08.53	21.160	N. 17 02 29.8	103.93

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Monday 5.					Wednesday 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	10 03 08.53	21.160	N. 17 02 29.8	103.93	00	11 39 14.74	19.059	N. 7 37 49.7	127.15
01	10 05 15.33	21.107	16 52 04.0	104.67	01	11 41 09.00	19.028	7 25 06.1	127.38
02	10 07 21.81	21.054	16 41 33.8	105.40	02	11 43 03.07	18.997	7 12 21.1	127.60
03	10 09 27.98	21.002	16 30 59.2	106.13	03	11 44 56.96	18.968	6 59 34.9	127.81
04	10 11 33.83	20.948	16 20 20.2	106.85	04	11 46 50.68	18.938	6 46 47.4	128.01
05	10 13 39.36	20.896	16 09 37.0	107.55	05	11 48 44.21	18.908	6 33 58.8	128.19
06	10 15 44.58	20.845	15 58 49.6	108.24	06	11 50 37.57	18.879	6 21 09.1	128.38
07	10 17 49.50	20.794	15 47 58.1	108.93	07	11 52 30.76	18.852	6 08 18.3	128.55
08	10 19 54.11	20.743	15 37 02.5	109.59	08	11 54 23.79	18.824	5 55 26.5	128.72
09	10 21 58.41	20.692	15 26 03.0	110.24	09	11 56 16.65	18.797	5 42 33.7	128.87
10	10 24 02.41	20.641	15 14 59.6	110.88	10	11 58 09.35	18.771	5 29 40.1	129.01
11	10 26 06.10	20.591	15 03 52.4	111.52	11	12 00 01.90	18.746	5 16 45.6	129.15
12	10 28 09.50	20.542	14 52 41.4	112.14	12	12 01 54.30	18.721	5 03 50.3	129.28
13	10 30 12.60	20.492	14 41 26.7	112.75	13	12 03 46.55	18.696	4 50 54.3	129.39
14	10 32 15.40	20.443	14 30 08.4	113.34	14	12 05 38.65	18.672	4 37 57.6	129.50
15	10 34 17.92	20.395	14 18 46.6	113.93	15	12 07 30.61	18.649	4 25 00.3	129.60
16	10 36 20.14	20.346	14 07 21.3	114.51	16	12 09 22.44	18.627	4 12 02.4	129.69
17	10 38 22.07	20.298	13 55 52.5	115.07	17	12 11 14.13	18.604	3 59 04.0	129.78
18	10 40 23.72	20.252	13 44 20.5	115.61	18	12 13 05.69	18.583	3 46 05.1	129.86
19	10 42 25.09	20.205	13 32 45.2	116.16	19	12 14 57.12	18.562	3 33 05.7	129.92
20	10 44 26.18	20.158	13 21 06.6	116.69	20	12 16 48.43	18.542	3 20 06.1	129.97
21	10 46 26.99	20.112	13 09 24.9	117.20	21	12 18 39.62	18.522	3 07 06.1	130.03
22	10 48 27.52	20.067	12 57 40.2	117.71	22	12 20 30.69	18.503	2 54 05.8	130.07
23	10 50 27.79	20.022	N. 12 45 52.4	118.21	23	12 22 21.65	18.484	N. 2 41 05.3	130.09
Tuesday 6.					Thursday 8.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	10 52 27.78	19.977	N. 12 34 01.7	118.69	00	12 24 12.50	18.466	N. 2 28 04.7	130.11
01	10 54 27.51	19.933	12 22 08.1	119.16	01	12 26 03.24	18.448	2 15 04.0	130.13
02	10 56 26.98	19.889	12 10 11.8	119.62	02	12 27 53.88	18.433	2 02 03.1	130.14
03	10 58 26.18	19.846	11 58 12.7	120.08	03	12 29 44.43	18.417	1 49 02.3	130.13
04	11 00 25.13	19.803	11 46 10.9	120.52	04	12 31 34.88	18.400	1 36 01.5	130.13
05	11 02 23.82	19.762	11 34 06.5	120.95	05	12 33 25.23	18.385	1 23 00.8	130.11
06	11 04 22.27	19.720	11 21 59.5	121.37	06	12 35 15.50	18.372	1 10 00.2	130.09
07	11 06 20.46	19.678	11 09 50.1	121.78	07	12 37 05.69	18.358	0 56 59.7	130.06
08	11 08 18.41	19.638	10 57 38.2	122.18	08	12 38 55.79	18.344	0 43 59.5	130.01
09	11 10 16.11	19.598	10 45 24.0	122.56	09	12 40 45.82	18.333	0 30 59.6	129.96
10	11 12 13.58	19.558	10 33 07.5	122.94	10	12 42 35.78	18.320	0 18 00.0	129.90
11	11 14 10.81	19.518	10 20 48.7	123.31	11	12 44 25.66	18.308	N. 0 05 00.8	129.83
12	11 16 07.80	19.479	10 08 27.8	123.66	12	12 46 15.48	18.298	S. 0 07 58.0	129.76
13	11 18 04.56	19.442	9 56 04.8	124.01	13	12 48 05.23	18.288	0 20 56.3	129.68
14	11 20 01.10	19.405	9 43 39.7	124.34	14	12 49 54.93	18.278	0 33 54.2	129.60
15	11 21 57.42	19.368	9 31 12.7	124.67	15	12 51 44.57	18.269	0 46 51.5	129.50
16	11 23 53.51	19.331	9 18 43.7	124.98	16	12 53 34.16	18.261	0 59 48.2	129.39
17	11 25 49.39	19.296	9 06 12.9	125.29	17	12 55 23.70	18.253	1 12 44.2	129.28
18	11 27 45.06	19.260	8 53 40.2	125.59	18	12 57 13.20	18.247	1 25 39.6	129.17
19	11 29 40.51	19.225	8 41 05.8	125.88	19	12 59 02.66	18.240	1 38 34.2	129.04
20	11 31 35.76	19.191	8 28 29.7	126.15	20	13 00 52.08	18.233	1 51 28.1	128.91
21	11 33 30.80	19.158	8 15 52.0	126.42	21	13 02 41.46	18.228	2 04 21.1	128.77
22	11 35 25.65	19.124	8 03 12.7	126.68	22	13 04 30.82	18.224	2 17 13.3	128.62
23	11 37 20.29	19.091	7 50 31.9	126.92	23	13 06 20.15	18.219	2 30 04.5	128.46
24	11 39 14.74	19.059	N. 7 37 49.7	127.15	24	13 08 09.45	18.215	S. 2 42 54.8	128.30

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Friday 9.					Sunday 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	13 08 09.45	18.215	S. 2 42 54.8	128.30	00	14 36 16.40	18.713	S. 12 26 29.1	112.19
01	13 09 58.73	18.213	2 55 44.1	128.13	01	14 38 08.75	18.737	12 37 40.7	111.68
02	13 11 48.00	18.211	3 08 32.3	127.95	02	14 40 01.24	18.760	12 48 49.3	111.18
03	13 13 37.26	18.208	3 21 19.5	127.77	03	14 41 53.87	18.785	12 59 54.9	110.67
04	13 15 26.50	18.207	3 34 05.5	127.58	04	14 43 46.66	18.810	13 10 57.3	110.13
05	13 17 15.74	18.207	3 46 50.4	127.38	05	14 45 39.59	18.835	13 21 56.5	109.60
06	13 19 04.98	18.207	3 59 34.0	127.17	06	14 47 32.68	18.862	13 32 52.5	109.06
07	13 20 54.22	18.207	4 12 16.4	126.96	07	14 49 25.93	18.888	13 43 45.2	108.52
08	13 22 43.46	18.208	4 24 57.5	126.73	08	14 51 19.34	18.915	13 54 34.7	107.97
09	13 24 32.72	18.210	4 37 37.2	126.51	09	14 53 12.91	18.943	14 05 20.8	107.40
10	13 26 21.98	18.212	4 50 15.6	126.28	10	14 55 06.65	18.970	14 16 03.5	106.83
11	13 28 11.26	18.215	5 02 52.5	126.03	11	14 57 00.55	18.998	14 26 42.8	106.27
12	13 30 00.56	18.218	5 15 27.9	125.78	12	14 58 54.65	19.028	14 37 18.7	105.68
13	13 31 49.88	18.223	5 28 01.8	125.53	13	15 00 48.88	19.057	14 47 51.0	105.09
14	13 33 39.23	18.227	5 40 34.2	125.26	14	15 02 43.31	19.087	14 58 19.8	104.50
15	13 35 28.60	18.232	5 53 04.9	124.98	15	15 04 37.92	19.117	15 08 45.0	103.90
16	13 37 18.01	18.238	6 05 34.0	124.71	16	15 06 32.71	19.147	15 19 06.6	103.29
17	13 39 07.45	18.244	6 18 01.4	124.43	17	15 08 27.68	19.178	15 29 24.5	102.67
18	13 40 56.94	18.252	6 30 27.1	124.13	18	15 10 22.84	19.209	15 39 38.6	102.05
19	13 42 46.47	18.258	6 42 51.0	123.83	19	15 12 18.19	19.242	15 49 49.1	101.43
20	13 44 36.04	18.266	6 55 13.1	123.53	20	15 14 13.74	19.273	15 59 55.7	100.78
21	13 46 25.66	18.275	7 07 33.4	123.22	21	15 16 09.47	19.306	16 09 58.4	100.13
22	13 48 15.34	18.285	7 19 51.7	122.89	22	15 18 05.41	19.339	16 19 57.3	99.48
23	13 50 05.08	18.294	7 32 08.1	122.58	23	15 20 01.54	19.373	16 29 52.2	98.83
Saturday 10.					Monday 12.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	13 51 54.87	18.304	S. 7 44 22.6	122.24	00	15 21 57.88	19.407	S. 16 39 43.2	98.17
01	13 53 44.73	18.315	7 56 35.0	121.90	01	15 23 54.42	19.441	16 49 30.2	97.48
02	13 55 34.65	18.326	8 08 45.4	121.56	02	15 25 51.17	19.476	16 59 13.0	96.80
03	13 57 24.64	18.338	8 20 53.7	121.20	03	15 27 48.13	19.511	17 08 51.0	96.12
04	13 59 14.71	18.351	8 32 59.8	120.84	04	15 29 45.30	19.546	17 18 26.4	95.42
05	14 01 04.85	18.363	8 45 03.8	120.48	05	15 31 42.68	19.582	17 27 50.0	94.72
06	14 02 55.07	18.378	8 57 05.5	120.09	06	15 33 40.28	19.618	17 37 23.0	94.01
07	14 04 45.38	18.392	9 09 04.9	119.71	07	15 35 38.09	19.654	17 46 44.0	93.29
08	14 06 35.77	18.406	9 21 02.0	119.33	08	15 37 36.13	19.691	17 56 02.5	92.57
09	14 08 26.25	18.421	9 32 56.8	118.93	09	15 39 34.38	19.728	18 05 15.0	91.83
10	14 10 16.82	18.437	9 44 49.2	118.53	10	15 41 32.86	19.766	18 14 24.5	91.09
11	14 12 07.49	18.453	9 56 39.2	118.13	11	15 43 31.57	19.803	18 23 28.0	90.34
12	14 13 58.26	18.470	10 08 26.7	117.71	12	15 45 30.50	19.841	18 32 26.0	89.58
13	14 15 49.13	18.488	10 20 11.7	117.28	13	15 47 29.66	19.879	18 41 23.0	88.83
14	14 17 40.11	18.506	10 31 54.1	116.86	14	15 49 29.05	19.918	18 50 14.0	88.06
15	14 19 31.20	18.524	10 43 34.0	116.43	15	15 51 28.68	19.958	18 59 00.0	87.28
16	14 21 22.40	18.543	10 55 11.2	115.98	16	15 53 28.54	19.997	19 07 41.0	86.49
17	14 23 13.71	18.562	11 06 45.7	115.53	17	15 55 28.64	20.037	19 16 18.4	85.70
18	14 25 05.14	18.583	11 18 17.5	115.08	18	15 57 28.98	20.076	19 24 50.2	84.90
19	14 26 56.70	18.603	11 29 46.6	114.61	19	15 59 29.55	20.116	19 33 17.2	84.09
20	14 28 48.38	18.623	11 41 12.8	114.14	20	16 01 30.37	20.157	19 41 39.3	83.28
21	14 30 40.18	18.645	11 52 36.3	113.67	21	16 03 31.43	20.198	19 49 56.5	82.45
22	14 32 32.12	18.668	12 03 56.8	113.18	22	16 05 32.74	20.238	19 58 08.7	81.62
23	14 34 24.19	18.690	12 15 14.4	112.69	23	16 07 34.28	20.278	20 06 15.9	80.78
24	14 36 16.40	18.713	S. 12 26 29.1	112.19	24	16 09 36.08	20.321	S. 20 14 18.1	79.94

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right. Ascension.	Var. in rom.	Declination.	Var. in rom.
Tuesday 13.					Thursday 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	16 09 36.08	20.321	S. 20 14 18.1	79.94	00	17 52 01.96	22.333	S. 24 45 44.9	30.22
01	16 11 38.13	20.362	20 22 15.2	79.08	01	17 54 16.07	22.371	24 48 42.6	29.00
02	16 13 40.42	20.403	20 30 07.1	78.22	02	17 56 30.41	22.408	24 51 32.9	27.78
03	16 15 42.96	20.445	20 37 53.8	77.35	03	17 58 44.97	22.445	24 54 15.9	26.54
04	16 17 45.76	20.488	20 45 35.3	76.48	04	18 00 59.75	22.482	24 56 51.4	25.30
05	16 19 48.81	20.529	20 53 11.5	75.59	05	18 03 14.75	22.518	24 59 19.5	24.06
06	16 21 52.11	20.571	21 00 42.4	74.70	06	18 05 29.96	22.553	25 01 40.1	22.80
07	16 23 55.66	20.613	21 08 07.9	73.79	07	18 07 45.39	22.588	25 03 53.1	21.54
08	16 25 59.47	20.656	21 15 27.9	72.88	08	18 10 01.02	22.623	25 05 58.6	20.28
09	16 28 03.53	20.698	21 22 42.5	71.98	09	18 12 16.86	22.657	25 07 56.5	19.02
10	16 30 07.85	20.742	21 29 51.6	71.05	10	18 14 32.90	22.691	25 09 46.8	17.73
11	16 32 12.43	20.785	21 36 55.1	70.12	11	18 16 49.15	22.724	25 11 29.3	16.45
12	16 34 17.27	20.828	21 43 53.0	69.18	12	18 19 05.59	22.757	25 13 04.2	15.17
13	16 36 22.36	20.871	21 50 45.2	68.23	13	18 21 22.23	22.789	25 14 31.3	13.87
14	16 38 27.72	20.914	21 57 31.8	67.28	14	18 23 39.06	22.821	25 15 50.6	12.57
15	16 40 33.33	20.957	22 04 12.5	66.31	15	18 25 56.08	22.852	25 17 02.1	11.26
16	16 42 39.20	21.001	22 10 47.5	65.34	16	18 28 13.28	22.882	25 18 05.7	09.95
17	16 44 45.34	21.044	22 17 16.6	64.36	17	18 30 30.66	22.913	25 19 01.5	08.63
18	16 46 51.73	21.087	22 23 39.8	63.38	18	18 32 48.23	22.942	25 19 49.3	07.31
19	16 48 58.38	21.130	22 29 57.1	62.38	19	18 35 05.96	22.970	25 20 29.2	05.98
20	16 51 05.29	21.173	22 36 08.4	61.38	20	18 37 23.87	22.999	25 21 01.1	04.65
21	16 53 12.46	21.217	22 42 13.6	60.37	21	18 39 41.95	23.027	25 21 25.0	03.32
22	16 55 19.89	21.259	22 48 12.8	59.35	22	18 42 00.19	23.053	25 21 40.9	01.97
23	16 57 27.57	21.303	S. 22 54 05.8	58.33	23	18 44 18.59	23.080	S. 25 21 48.6	00.62
Wednesday 14.					Friday 16.				
00	16 59 35.52	21.347	S. 22 59 52.7	57.29	00	18 46 37.15	23.106	S. 25 21 48.3	00.73
01	17 01 43.73	21.389	23 05 33.3	56.25	01	18 48 55.86	23.131	25 21 39.8	02.09
02	17 03 52.19	21.433	23 11 07.7	55.20	02	18 51 14.72	23.156	25 21 23.2	03.45
03	17 06 00.92	21.476	23 16 35.7	54.14	03	18 53 33.73	23.180	25 20 58.4	04.82
04	17 08 09.90	21.518	23 21 57.4	53.08	04	18 55 52.88	23.203	25 20 25.4	06.18
05	17 10 19.13	21.561	23 27 12.7	52.01	05	18 58 12.17	23.226	25 19 44.2	07.56
06	17 12 28.63	21.604	23 32 21.5	50.93	06	19 00 31.59	23.248	25 18 54.7	08.93
07	17 14 38.38	21.646	23 37 23.8	49.84	07	19 02 51.14	23.269	25 17 57.0	10.32
08	17 16 48.38	21.688	23 42 19.6	48.75	08	19 05 10.82	23.289	25 16 50.9	11.70
09	17 18 58.63	21.730	23 47 08.8	47.64	09	19 07 30.61	23.309	25 15 36.6	13.08
10	17 21 09.14	21.773	23 51 51.3	46.53	10	19 09 50.53	23.329	25 14 13.9	14.48
11	17 23 19.90	21.814	23 56 27.2	45.42	11	19 12 10.56	23.348	25 12 42.8	15.88
12	17 25 30.91	21.856	24 00 56.3	44.29	12	19 14 30.70	23.366	25 11 03.4	17.27
13	17 27 42.17	21.897	24 05 18.7	43.16	13	19 16 50.95	23.383	25 09 15.6	18.68
14	17 29 53.67	21.938	24 09 34.2	42.02	14	19 19 11.29	23.398	25 07 19.3	20.08
15	17 32 05.42	21.979	24 13 42.9	40.87	15	19 21 31.73	23.415	25 05 14.7	21.48
16	17 34 17.42	22.020	24 17 44.6	39.72	16	19 23 52.27	23.430	25 03 01.6	22.89
17	17 36 29.66	22.060	24 21 39.5	38.56	17	19 26 12.89	23.444	25 00 40.0	24.30
18	17 38 42.14	22.099	24 25 27.3	37.38	18	19 28 33.60	23.458	24 58 10.0	25.71
19	17 40 54.85	22.139	24 29 08.1	36.21	19	19 30 54.39	23.472	24 55 31.5	27.13
20	17 43 07.81	22.179	24 32 41.8	35.03	20	19 33 15.26	23.483	24 52 44.5	28.53
21	17 45 21.00	22.218	24 36 08.4	33.83	21	19 35 36.19	23.494	24 49 49.1	29.95
22	17 47 34.42	22.256	24 39 27.8	32.63	22	19 37 57.19	23.506	24 46 45.1	31.38
23	17 49 48.07	22.295	24 42 40.0	31.43	23	19 40 18.26	23.516	24 43 32.6	32.79
24	17 52 01.96	22.333	S. 24 45 44.9	30.22	24	19 42 39.38	23.525	S. 24 40 11.6	34.21

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Saturday 17.					Monday 19.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	19 42 39.38	23.525	S. 24 40 11.6	34.21	00	21 35 27.37	23.271	S. 19 14 59.2	99.86
01	19 45 00.56	23.534	24 36 42.1	35.63	01	21 37 46.95	23.255	19 04 56.3	101.10
02	19 47 21.79	23.542	24 33 04.0	37.06	02	21 40 06.43	23.239	18 54 46.0	102.33
03	19 49 43.06	23.549	24 29 17.4	38.48	03	21 42 25.82	23.223	18 44 28.4	103.54
04	19 52 04.38	23.556	24 25 22.3	39.90	04	21 44 45.11	23.206	18 34 03.5	104.76
05	19 54 25.73	23.562	24 21 18.6	41.33	05	21 47 04.29	23.189	18 23 31.3	105.96
06	19 56 47.12	23.568	24 17 06.4	42.74	06	21 49 23.38	23.173	18 12 52.0	107.15
07	19 59 08.54	23.573	24 12 45.7	44.17	07	21 51 42.37	23.156	18 02 05.5	108.34
08	20 01 29.99	23.576	24 08 16.4	45.59	08	21 54 01.25	23.138	17 51 11.9	109.52
09	20 03 51.45	23.579	24 03 38.6	47.01	09	21 56 20.03	23.122	17 40 11.3	110.68
10	20 06 12.94	23.582	23 58 52.3	48.43	10	21 58 38.71	23.104	17 29 03.8	111.83
11	20 08 34.43	23.583	23 53 57.5	49.84	11	22 00 57.28	23.087	17 17 49.3	112.98
12	20 10 55.94	23.585	23 48 54.2	51.26	12	22 03 15.75	23.070	17 06 28.0	114.12
13	20 13 17.45	23.586	23 43 42.4	52.68	13	22 05 34.12	23.052	16 54 59.9	115.24
14	20 15 38.97	23.586	23 38 22.0	54.10	14	22 07 52.37	23.033	16 43 25.1	116.36
15	20 18 00.48	23.584	23 32 53.2	55.51	15	22 10 10.52	23.017	16 31 43.6	117.46
16	20 20 21.98	23.583	23 27 15.9	56.92	16	22 12 28.57	22.999	16 19 55.6	118.55
17	20 22 43.48	23.582	23 21 30.2	58.33	17	22 14 46.51	22.982	16 08 01.0	119.63
18	20 25 04.96	23.579	23 15 36.0	59.73	18	22 17 04.35	22.964	15 56 00.0	120.70
19	20 27 26.43	23.576	23 09 33.4	61.13	19	22 19 22.08	22.947	15 43 52.6	121.77
20	20 29 47.87	23.572	23 03 22.4	62.53	20	22 21 39.71	22.929	15 31 38.8	122.82
21	20 32 09.29	23.568	22 57 03.0	63.93	21	22 23 57.23	22.912	15 19 18.8	123.84
22	20 34 30.69	23.563	22 50 35.2	65.33	22	22 26 14.65	22.894	15 06 52.7	124.87
23	20 36 52.05	23.558	S. 22 43 59.1	66.72	23	22 28 31.96	22.877	S. 14 54 20.4	125.89
Sunday 18.					Tuesday 20.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	20 39 13.38	23.552	S. 22 37 14.6	68.11	00	22 30 49.17	22.860	S. 14 41 42.0	126.89
01	20 41 34.67	23.545	22 30 21.8	69.49	01	22 33 06.28	22.843	14 28 57.7	127.88
02	20 43 55.92	23.538	22 23 20.7	70.88	02	22 35 23.29	22.826	14 16 07.5	128.85
03	20 46 17.13	23.530	22 16 11.3	72.25	03	22 37 40.19	22.809	14 03 11.5	129.82
04	20 48 38.28	23.522	22 08 53.7	73.62	04	22 39 57.00	22.793	13 50 09.7	130.77
05	20 50 59.39	23.514	22 01 27.9	74.98	05	22 42 13.70	22.776	13 37 02.3	131.70
06	20 53 20.45	23.505	21 53 53.9	76.35	06	22 44 30.31	22.761	13 23 49.3	132.63
07	20 55 41.45	23.495	21 46 11.7	77.71	07	22 46 46.83	22.744	13 10 30.8	133.53
08	20 58 02.39	23.484	21 38 21.4	79.06	08	22 49 03.24	22.728	12 57 06.9	134.43
09	21 00 23.26	23.474	21 30 23.0	80.41	09	22 51 19.57	22.713	12 43 37.6	135.32
10	21 02 44.08	23.463	21 22 16.5	81.75	10	22 53 35.80	22.697	12 30 03.0	136.19
11	21 05 04.82	23.452	21 14 02.0	83.08	11	22 55 51.93	22.682	12 16 23.3	137.05
12	21 07 25.50	23.441	21 05 39.5	84.42	12	22 58 07.98	22.668	12 02 38.4	137.90
13	21 09 46.11	23.428	20 57 09.0	85.74	13	23 00 23.94	22.653	11 48 48.5	138.73
14	21 12 06.64	23.415	20 48 30.6	87.06	14	23 02 39.82	22.638	11 34 53.7	139.54
15	21 14 27.09	23.402	20 39 44.3	88.38	15	23 04 55.60	22.624	11 20 54.0	140.35
16	21 16 47.46	23.388	20 30 50.1	89.68	16	23 07 11.31	22.611	11 06 49.5	141.13
17	21 19 07.75	23.375	20 21 48.2	90.98	17	23 09 26.93	22.598	10 52 40.4	141.90
18	21 21 27.06	23.361	20 12 38.4	92.28	18	23 11 42.48	22.585	10 38 26.7	142.67
19	21 23 48.08	23.347	20 03 20.9	93.55	19	23 13 57.95	22.572	10 24 08.4	143.41
20	21 26 08.12	23.333	19 53 55.8	94.83	20	23 16 13.34	22.559	10 09 45.8	144.13
21	21 28 28.07	23.318	19 44 23.0	96.10	21	23 18 28.66	22.548	9 55 18.8	144.85
22	21 30 47.93	23.303	19 34 42.6	97.37	22	23 20 43.91	22.536	9 40 47.6	145.55
23	21 33 07.70	23.287	19 24 54.6	98.62	23	23 22 59.09	22.524	9 26 12.2	146.24
24	21 35 27.37	23.271	S. 19 14 59.2	99.86	24	23 25 14.20	22.513	S. 9 11 32.7	146.91

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Wednesday 21.					Friday 23.				
	h m s	s	° ' " "			h m s	s	° ' " "	
00	23 25 14.20	22.513	S. 9 11 32.7	146.91	00	01 12 57.92	22.583	N. 3 19 27.2	159.33
01	23 27 29.25	22.503	8 56 49.3	147.56	01	01 15 13.46	22.598	3 35 22.7	159.16
02	23 29 44.24	22.493	8 42 02.0	148.20	02	01 17 29.09	22.613	3 51 17.1	158.96
03	23 31 59.17	22.483	8 27 10.9	148.83	03	01 19 44.82	22.630	4 07 10.2	158.74
04	23 34 14.04	22.474	8 12 16.1	149.43	04	01 22 00.65	22.648	4 23 02.0	158.51
05	23 36 28.86	22.466	7 57 17.7	150.02	05	01 24 16.59	22.665	4 38 52.3	158.26
06	23 38 43.63	22.457	7 42 15.8	150.59	06	01 26 32.63	22.683	4 54 41.1	157.99
07	23 40 58.34	22.449	7 27 10.6	151.15	07	01 28 48.79	22.702	5 10 28.2	157.70
08	23 43 13.02	22.443	7 12 02.0	151.70	08	01 31 05.05	22.721	5 26 13.5	157.40
09	23 45 27.65	22.435	6 56 50.2	152.23	09	01 33 21.44	22.742	5 41 57.0	157.08
10	23 47 42.24	22.428	6 41 35.3	152.73	10	01 35 37.95	22.761	5 57 38.4	156.73
11	23 49 56.79	22.422	6 26 17.4	153.23	11	01 37 54.57	22.782	6 13 17.7	156.37
12	23 52 11.30	22.417	6 10 56.5	153.72	12	01 40 11.33	22.804	6 28 54.8	155.98
13	23 54 25.79	22.412	5 55 32.8	154.18	13	01 42 28.22	22.825	6 44 29.5	155.58
14	23 56 40.24	22.407	5 40 06.4	154.62	14	01 44 45.23	22.848	7 00 01.8	155.17
15	23 58 54.67	22.403	5 24 37.4	155.04	15	01 47 02.39	22.872	7 15 31.6	154.73
16	00 01 09.08	22.400	5 09 05.9	155.45	16	01 49 19.69	22.895	7 30 58.6	154.28
17	00 03 23.47	22.397	4 53 32.0	155.84	17	01 51 37.13	22.918	7 46 22.9	153.81
18	00 05 37.84	22.394	4 37 55.8	156.23	18	01 53 54.71	22.943	8 01 44.3	153.32
19	00 07 52.20	22.393	4 22 17.3	156.59	19	01 56 12.44	22.968	8 17 02.7	152.81
20	00 10 06.55	22.391	4 06 36.7	156.93	20	01 58 30.33	22.994	8 32 18.0	152.28
21	00 12 20.89	22.390	3 50 54.2	157.25	21	02 00 48.37	23.019	8 47 30.1	151.74
22	00 14 35.23	22.390	3 35 09.7	157.57	22	02 03 06.56	23.046	9 02 38.9	151.18
23	00 16 49.57	22.390	S. 3 19 23.4	157.86	23	02 05 24.92	23.073	N. 9 17 44.2	150.59
Thursday 22.					Saturday 24.				
00	00 19 03.91	22.391	S. 3 03 35.4	158.13	00	02 07 43.44	23.101	N. 9 32 46.0	150.00
01	00 21 18.26	22.393	2 47 45.8	158.39	01	02 10 02.13	23.128	9 47 44.2	149.38
02	00 23 32.62	22.394	2 31 54.7	158.63	02	02 12 20.98	23.156	10 02 38.6	148.74
03	00 25 46.99	22.396	2 16 02.3	158.84	03	02 14 40.00	23.185	10 17 29.1	148.09
04	00 28 01.37	22.399	2 00 08.6	159.05	04	02 16 59.20	23.214	10 32 15.7	147.42
05	00 30 15.78	22.403	1 44 13.7	159.23	05	02 19 18.57	23.244	10 46 58.1	146.73
06	00 32 30.21	22.408	1 28 17.8	159.40	06	02 21 38.13	23.274	11 01 36.4	146.03
07	00 34 44.67	22.412	1 12 20.9	159.56	07	02 23 57.86	23.303	11 16 10.4	145.31
08	00 36 59.15	22.417	0 56 23.1	159.68	08	02 26 17.77	23.334	11 30 40.1	144.57
09	00 39 13.67	22.423	0 40 24.7	159.79	09	02 28 37.87	23.366	11 45 05.2	143.80
10	00 41 28.23	22.430	0 24 25.6	159.90	10	02 30 58.16	23.397	11 59 25.7	143.03
11	00 43 42.83	22.437	S. 0 08 25.9	159.98	11	02 33 18.63	23.428	12 13 41.5	142.23
12	00 45 57.47	22.444	N. 0 07 34.1	160.03	12	02 35 39.30	23.461	12 27 52.5	141.43
13	00 48 12.16	22.453	0 23 34.5	160.07	13	02 38 00.16	23.493	12 41 58.6	140.60
14	00 50 26.90	22.462	0 39 35.0	160.09	14	02 40 21.21	23.525	12 55 59.7	139.75
15	00 52 41.70	22.471	0 55 35.6	160.11	15	02 42 42.46	23.558	13 09 55.6	138.88
16	00 54 56.55	22.481	1 11 36.3	160.09	16	02 45 03.90	23.591	13 23 46.3	138.01
17	00 57 11.47	22.492	1 27 36.7	160.06	17	02 47 25.55	23.625	13 37 31.7	137.12
18	00 59 26.45	22.503	1 43 37.0	160.02	18	02 49 47.40	23.658	13 51 11.7	136.20
19	01 01 41.50	22.515	1 59 36.9	159.94	19	02 52 09.44	23.691	14 04 46.1	135.27
20	01 03 56.63	22.528	2 15 36.3	159.85	20	02 54 31.69	23.726	14 18 14.9	134.33
21	01 06 11.83	22.540	2 31 35.1	159.75	21	02 56 54.15	23.759	14 31 38.1	133.37
22	01 08 27.11	22.553	2 47 33.3	159.63	22	02 59 16.80	23.793	14 44 55.4	132.38
23	01 10 42.47	22.568	3 03 30.7	159.49	23	03 01 39.67	23.828	14 58 06.7	131.39
24	01 12 57.92	22.583	N. 3 19 27.2	159.33	24	03 04 02.74	23.863	N. 15 11 12.1	130.39

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Sunday 25.					Tuesday 27.				
	h m s		° ' "			h m s		° ' "	
00	03 04 02.74	23.898	N. 15 11 13.1	130.39	00	05 02 21.10	25.290	N. 23 13 48.5	66.15
01	03 06 26.02	23.898	15 24 11.4	129.36	01	05 04 52.89	25.307	23 20 20.7	64.57
02	03 08 49.51	23.932	15 37 04.4	128.32	02	05 07 24.78	25.323	23 26 43.3	62.98
03	03 11 13.20	23.967	15 49 51.2	127.27	03	05 09 56.75	25.337	23 32 56.4	61.38
04	03 13 37.11	24.003	16 02 51.6	126.18	04	05 12 28.82	25.350	23 38 59.8	59.78
05	03 16 01.23	24.037	16 15 05.4	125.09	05	05 15 00.96	25.363	23 44 53.7	58.18
06	03 18 25.55	24.072	16 27 32.7	123.99	06	05 17 33.18	25.375	23 50 37.9	56.56
07	03 20 50.09	24.107	16 39 53.3	122.88	07	05 20 05.46	25.386	23 56 12.4	54.94
08	03 23 14.83	24.141	16 52 07.2	121.74	08	05 22 37.81	25.397	24 01 37.2	53.33
09	03 25 39.78	24.177	17 04 14.2	120.59	09	05 25 10.22	25.406	24 06 52.3	51.71
10	03 28 04.95	24.212	17 16 14.3	119.43	10	05 27 42.68	25.413	24 11 57.7	50.08
11	03 30 30.32	24.246	17 28 07.4	118.25	11	05 30 15.18	25.421	24 16 53.2	48.43
12	03 32 55.90	24.281	17 39 53.3	117.06	12	05 32 47.73	25.428	24 21 38.9	46.80
13	03 35 21.69	24.315	17 51 32.1	115.85	13	05 35 20.31	25.432	24 26 14.8	45.17
14	03 37 47.68	24.349	18 03 03.5	114.63	14	05 37 52.91	25.436	24 30 40.9	43.53
15	03 40 13.88	24.384	18 14 27.6	113.39	15	05 40 25.54	25.439	24 34 57.1	41.88
16	03 42 40.29	24.419	18 25 44.2	112.14	16	05 42 58.16	25.441	24 39 03.5	40.24
17	03 45 06.91	24.453	18 36 53.3	110.88	17	05 45 30.83	25.442	24 43 00.0	38.59
18	03 47 33.72	24.486	18 47 54.8	109.61	18	05 48 03.48	25.442	24 46 46.6	36.94
19	03 50 00.74	24.510	18 58 48.6	108.33	19	05 50 36.13	25.440	24 50 23.3	35.30
20	03 52 27.95	24.533	19 09 34.7	107.03	20	05 53 08.76	25.438	24 53 50.2	33.65
21	03 54 55.37	24.556	19 20 12.9	105.70	21	05 55 41.38	25.435	24 57 07.1	31.99
22	03 57 22.98	24.618	19 30 43.1	104.38	22	05 58 13.98	25.430	25 00 14.1	30.34
23	03 59 50.78	24.650	N. 19 41 05.4	103.04	23	06 00 46.54	25.424	N. 25 03 11.2	28.68
Monday 26.					Wednesday 28.				
00	04 02 18.78	24.683	N. 19 51 19.6	101.69	00	06 03 19.07	25.418	N. 25 05 58.3	27.03
01	04 04 46.97	24.714	20 01 25.7	100.33	01	06 05 51.55	25.409	25 08 35.6	25.39
02	04 07 15.35	24.745	20 11 23.5	98.94	02	06 08 23.98	25.401	25 11 03.0	23.73
03	04 09 43.91	24.776	20 21 13.0	97.56	03	06 10 56.36	25.391	25 13 20.4	22.08
04	04 12 12.66	24.807	20 30 54.2	96.16	04	06 13 28.67	25.379	25 15 28.0	20.44
05	04 14 41.59	24.837	20 40 26.9	94.75	05	06 16 00.91	25.368	25 17 35.7	18.79
06	04 17 10.70	24.866	20 49 51.2	93.33	06	06 18 33.08	25.354	25 19 13.5	17.15
07	04 19 39.98	24.894	20 59 06.9	91.90	07	06 21 05.16	25.339	25 20 51.5	15.51
08	04 22 09.43	24.923	21 08 14.0	90.46	08	06 23 37.15	25.324	25 22 19.6	13.87
09	04 24 39.05	24.951	21 17 12.4	89.01	09	06 26 09.05	25.308	25 23 57.9	12.23
10	04 27 08.84	24.978	21 26 02.1	87.54	10	06 28 40.84	25.289	25 24 46.3	10.59
11	04 29 38.79	25.005	21 34 42.9	86.07	11	06 31 12.52	25.271	25 25 45.0	08.90
12	04 32 08.90	25.031	21 43 14.9	84.59	12	06 33 44.09	25.252	25 26 33.8	07.13
13	04 34 39.16	25.057	21 51 38.0	83.10	13	06 36 15.54	25.230	25 27 12.9	05.41
14	04 37 09.58	25.082	21 59 52.1	81.60	14	06 38 46.85	25.208	25 27 42.3	04.09
15	04 39 40.14	25.105	22 07 57.2	80.09	15	06 41 18.03	25.185	25 28 02.0	02.47
16	04 42 10.84	25.129	22 15 53.2	78.58	16	06 43 49.07	25.161	25 28 11.9	00.95
17	04 44 41.69	25.152	22 23 40.1	77.15	17	06 46 19.96	25.135	25 28 12.2	00.75
18	04 47 12.66	25.173	22 31 17.8	75.51	18	06 48 50.69	25.108	25 28 02.9	00.11
19	04 49 43.77	25.195	22 38 46.2	73.97	19	06 51 21.26	25.082	25 27 44.0	03.95
20	04 52 15.00	25.216	22 46 05.4	72.43	20	06 53 51.67	25.055	25 27 15.5	05.54
21	04 54 46.36	25.236	22 53 15.3	70.87	21	06 56 21.90	25.023	25 26 37.5	07.13
22	04 57 17.83	25.254	23 00 15.8	69.30	22	06 58 51.95	24.993	25 25 50.0	08.71
23	04 59 49.41	25.273	23 07 06.9	67.73	23	07 01 21.82	24.963	25 24 53.0	10.28
24	05 02 21.10	25.290	N. 23 13 48.5	66.15	24	07 03 51.50	24.930	N. 25 23 46.6	11.85

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 29.					Saturday 31.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	07 03 51.50	24.930	N. 25 23 46.6	11.85	00	08 58 20.13	22.564	N. 21 42 28.7	76.46
01	07 06 20.98	24.897	25 22 30.8	13.41	01	09 00 35.34	22.506	21 34 46.7	77.53
02	07 08 50.26	24.863	25 21 05.7	14.96	02	09 02 50.20	22.447	21 26 58.3	78.60
03	07 11 19.33	24.827	25 19 31.3	16.51	03	09 05 04.70	22.388	21 19 03.5	79.66
04	07 13 48.18	24.791	25 17 47.6	18.06	04	09 07 18.86	22.331	21 11 02.4	80.70
05	07 16 16.82	24.754	25 15 54.6	19.59	05	09 09 32.67	22.272	21 02 55.1	81.73
06	07 18 45.23	24.716	25 13 52.5	21.11	06	09 11 46.12	22.213	20 54 41.6	82.76
07	07 21 13.41	24.677	25 11 41.3	22.63	07	09 13 59.23	22.156	20 46 22.0	83.76
08	07 23 41.35	24.638	25 09 21.0	24.14	08	09 16 11.99	22.098	20 37 56.5	84.75
09	07 26 09.06	24.598	25 06 51.6	25.64	09	09 18 24.40	22.039	20 29 25.0	85.74
10	07 28 36.52	24.556	25 04 13.3	27.13	10	09 20 36.46	21.981	20 20 47.6	86.72
11	07 31 03.73	24.513	25 01 26.0	28.63	11	09 22 48.17	21.923	20 12 04.4	87.68
12	07 33 30.68	24.470	24 58 29.8	30.10	12	09 24 59.53	21.865	20 03 15.5	88.63
13	07 35 57.37	24.427	24 55 24.8	31.57	13	09 27 10.55	21.808	19 54 20.9	89.56
14	07 38 23.80	24.383	24 52 11.0	33.03	14	09 29 21.22	21.749	19 45 20.8	90.48
15	07 40 49.96	24.338	24 48 48.5	34.47	15	09 31 31.54	21.692	19 36 15.1	91.40
16	07 43 15.85	24.292	24 45 17.4	35.91	16	09 33 41.52	21.635	19 27 04.0	92.30
17	07 45 41.46	24.245	24 41 37.6	37.35	17	09 35 51.16	21.578	19 17 47.5	93.18
18	07 48 06.79	24.198	24 37 49.2	38.77	18	09 38 00.46	21.521	19 08 25.8	94.07
19	07 50 31.83	24.150	24 33 52.4	40.18	19	09 40 09.41	21.464	18 58 58.7	94.94
20	07 52 56.59	24.102	24 29 47.1	41.58	20	09 42 18.03	21.408	18 49 26.5	95.79
21	07 55 21.05	24.052	24 25 33.4	42.98	21	09 44 26.31	21.352	18 39 49.2	96.63
22	07 57 45.21	24.002	24 21 11.4	44.36	22	09 46 34.25	21.296	18 30 06.9	97.46
23	08 00 09.07	23.952	N. 24 16 41.1	45.73	23	09 48 41.86	21.240	N. 18 20 19.7	98.28
Friday 30.					Sunday, APRIL 1.				
00	08 02 32.63	23.901	N. 24 12 02.6	47.09	00	09 50 49.13	21.184	N. 18 10 27.5	99.10
01	08 04 55.88	23.849	24 07 16.0	48.44					
02	08 07 18.82	23.798	24 02 21.3	49.78					
03	08 09 41.45	23.745	23 57 18.6	51.11					
04	08 12 03.76	23.692	23 52 08.0	52.43					
05	08 14 25.75	23.638	23 46 49.4	53.74					
06	08 16 47.42	23.585	23 41 23.1	55.03					
07	08 19 08.77	23.531	23 35 49.0	56.33					
08	08 21 29.79	23.476	23 30 07.2	57.60					
09	08 23 50.48	23.421	23 24 17.8	58.87					
10	08 26 10.84	23.365	23 18 20.8	60.12					
11	08 28 30.86	23.309	23 12 16.4	61.36					
12	08 30 50.55	23.253	23 06 04.5	62.59					
13	08 33 09.90	23.198	22 59 45.3	63.81					
14	08 35 28.92	23.141	22 53 18.8	65.02					
15	08 37 47.59	23.083	22 46 45.1	66.21					
16	08 40 05.92	23.027	22 40 04.3	67.40					
17	08 42 23.91	22.969	22 33 16.3	68.58					
18	08 44 41.55	22.912	22 26 21.4	69.73					
19	08 46 58.85	22.855	22 19 19.6	70.88					
20	08 49 15.81	22.797	22 12 10.8	72.02					
21	08 51 32.41	22.738	22 04 55.3	73.14					
22	08 53 48.67	22.680	21 57 33.1	74.26					
23	08 56 04.57	22.622	21 50 04.2	75.37					
24	08 58 20.13	22.564	N. 21 42 28.7	76.46					

PHASES OF THE MOON.				
			h	m
Mar. 6	○	Full Moon	..	11 26.9
" 14	☾	Last Quarter	..	15 20.0
" 21	☉	New Moon	..	20 29.3
" 28	☾	First Quarter	..	11 54.3

			h	
Mar. 11	☾	Apogee	..	11.0
" 23	☾	Perigee	..	10.6

AT APPARENT NOON.

Date	THE SUN'S					Sideral Time of the Semi- diameter passing the Meridian.	Equation of Time, to be added to	
	Right Ascension.	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.	Subtraction from Sidereal Time.		Var. in 1 hour.	
	h m s		° ' " "	"	m s	m s	s	
Sun.	1	00 42 21.41	9.101	N 4 33 27.2	57.81	1 04.47	3 57.73	0.754
Mon.	2	00 45 50.52	9.105	4 56 32.8	57.62	1 04.49	3 39.70	0.749
Tues.	3	00 40 38.47	9.111	5 10 33.0	57.30	1 04.51	3 21.78	0.744
Wed.	4	00 53 17.20	9.117	5 42 27.6	57.15	1 04.53	3 04.01	0.737
Thur.	5	00 56 56.10	9.124	6 05 16.1	56.89	1 04.56	2 46.40	0.730
Frid.	6	01 02 35.18	9.132	6 27 58.4	56.62	1 04.50	2 28.98	0.722
Sat.	7	01 04 14.47	9.142	6 50 34.0	56.24	1 04.62	2 11.76	0.713
Sun.	8	01 07 53.00	9.152	7 13 02.7	56.05	1 04.65	1 54.77	0.703
Mon.	9	01 11 31.75	9.162	7 35 24.1	55.74	1 04.69	1 38.03	0.692
Tues.	10	01 15 11.70	9.172	7 57 37.0	55.41	1 04.72	1 21.55	0.681
Wed.	11	01 18 54.10	9.180	8 19 43.8	55.08	1 04.77	1 05.30	0.668
Thur.	12	01 22 34.73	9.190	8 41 41.5	54.73	1 04.81	0 49.47	0.655
Frid.	13	01 26 15.07	9.213	9 03 30.6	54.30	1 04.85	0 33.07	0.642
Sat.	14	01 29 56.69	9.223	9 25 10.8	53.98	1 04.92	0 18.04	0.627
Sun.	15	01 33 38.60	9.243	9 46 41.7	53.59	1 04.95	0 03.31	0.612
Mon.	16	01 37 20.61	9.258	10 08 03.1	53.19	1 05.01	0 10.10	0.596
Tues.	17	01 41 03.01	9.278	10 20 14.0	52.77	1 05.06	0 21.31	0.580
Wed.	18	01 44 45.80	9.291	10 50 15.8	52.33	1 05.12	0 36.51	0.564
Thur.	19	01 48 29.00	9.308	11 11 00.4	51.88	1 05.18	0 51.80	0.546
Frid.	20	01 52 12.01	9.326	11 31 46.0	51.42	1 05.24	1 04.77	0.529
Sat.	21	01 55 55.64	9.344	11 52 14.2	50.94	1 05.30	1 17.25	0.511
Sun.	22	01 59 41.11	9.362	12 12 30.8	50.44	1 05.37	1 29.31	0.493
Mon.	23	02 03 26.02	9.380	12 32 35.2	49.93	1 05.43	1 40.02	0.475
Tues.	24	02 07 11.37	9.399	12 52 27.2	49.40	1 05.50	1 52.20	0.456
Wed.	25	02 10 57.10	9.418	13 12 06.4	48.86	1 05.57	2 02.57	0.437
Thur.	26	02 14 43.46	9.438	13 31 32.5	48.31	1 05.64	2 13.05	0.417
Frid.	27	02 18 30.22	9.458	13 50 45.1	47.74	1 05.72	2 22.82	0.397
Sat.	28	02 22 17.46	9.479	14 09 44.0	47.16	1 05.79	2 32.11	0.377
Sun.	29	02 26 05.20	9.500	14 28 28.8	46.57	1 05.87	2 40.02	0.356
Mon.	30	02 29 53.45	9.521	14 46 59.2	45.96	1 05.94	2 49.10	0.334
Tues.	31	02 33 42.22	9.543	N. 15 05 14.9	45.34	1 06.02	2 56.95	0.313

* Mean Time of the Semidiameter passing may be found by subtracting $0^s.18$ from the Sideral Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*	subtracted from Apparent Time.	
		h m s	° ' "	' ' "	m s	h m s
Sun.	1	00 42 20.81	N. 4 33 23.4	16 01.55	3 57.78	00 38 23.03
Mon.	2	00 45 59.32	4 56 29.3	16 01.28	3 39.74	00 42 19.58
Tues.	3	00 49 37.96	5 19 29.8	16 01.00	3 21.82	00 46 16.14
Wed.	4	00 53 16.74	5 42 24.7	16 00.73	3 04.05	00 50 12.69
Thur.	5	00 56 55.68	6 05 13.5	16 00.45	2 46.44	00 54 09.24
Frid.	6	01 00 34.81	6 27 56.1	16 00.18	2 29.01	00 58 05.80
Sat.	7	01 04 14.14	6 50 32.0	15 59.90	2 11.79	01 02 02.35
Sun.	8	01 07 53.70	7 13 00.9	15 59.62	1 54.79	01 05 58.90
Mon.	9	01 11 33.50	7 35 22.6	15 59.34	1 38.05	01 09 55.46
Tues.	10	01 15 13.58	7 57 36.7	15 59.07	1 21.57	01 13 52.01
Wed.	11	01 18 53.94	8 19 42.8	15 58.79	1 05.37	01 17 48.56
Thur.	12	01 22 34.60	8 41 40.7	15 58.51	0 49.48	01 21 45.12
Frid.	13	01 26 15.59	9 03 30.1	15 58.24	0 33.91	01 25 41.67
Sat.	14	01 29 56.91	9 25 10.5	15 57.96	0 18.68	01 29 38.23
Sun.	15	01 33 38.59	9 46 41.7	15 57.69	0 03.81	01 33 34.78
Mon.	16	01 37 20.64	10 08 03.3	15 57.41	0 10.70	01 37 31.33
Tues.	17	01 41 03.07	10 29 15.0	15 57.14	0 24.82	01 41 27.89
Wed.	18	01 44 45.90	10 50 16.4	15 56.88	0 38.55	01 45 24.44
Thur.	19	01 48 29.13	11 11 07.1	15 56.61	0 51.87	01 49 21.00
Frid.	20	01 52 12.77	11 31 46.9	15 56.35	1 04.78	01 53 17.55
Sat.	21	01 55 56.84	11 52 15.3	15 56.09	1 17.26	01 57 14.11
Sun.	22	01 59 41.34	12 12 32.0	15 55.84	1 29.32	02 01 10.66
Mon.	23	02 03 26.28	12 32 36.6	15 55.59	1 40.93	02 05 07.22
Tues.	24	02 07 11.67	12 52 28.7	15 55.34	1 52.10	02 09 03.77
Wed.	25	02 10 57.51	13 12 08.1	15 55.09	2 02.82	02 13 00.32
Thur.	26	02 14 43.81	13 31 34.3	15 54.84	2 13.07	02 16 56.88
Frid.	27	02 18 30.59	13 50 47.0	15 54.60	2 22.84	02 20 53.43
Sat.	28	02 22 17.86	14 09 46.0	15 54.36	2 32.13	02 24 49.99
Sun.	29	02 26 05.63	14 28 30.9	15 54.12	2 40.92	02 28 46.54
Mon.	30	02 29 53.90	14 47 01.4	15 53.89	2 49.20	02 32 43.10
Tues.	31	02 33 42.69	N. 15 05 17.2	15 53.65	2 56.97	02 36 39.66

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	12h.	12h.			ch.	12h.	ch.	12h.
	° ' "	"		h m s	" "	" "	" "	" "
1	11 30 55.2	N. 0.21	9.9998328	11 21 43.26	15 16.56	15 12.33	56 03.89	55 48.38
2	12 50 03.5	0.22	9.9999562	11 17 47.35	15 08.38	15 04.71	55 33.88	55 20.38
3	13 29 09.7	0.21	0.0000801	11 13 51.44	15 01.30	14 58.15	55 07.87	54 56.33
4	14 28 13.7	0.17	0.0002044	11 09 55.53	14 55.28	14 52.67	54 45.78	54 36.21
5	15 27 15.6	0.10	0.0003290	11 05 59.63	14 50.35	14 48.31	54 27.67	54 20.21
6	16 26 15.5	N. 0.01	0.0004541	11 02 03.72	14 46.59	14 45.19	54 13.88	54 08.76
7	17 25 13.5	S. 0.09	0.0005794	10 58 07.81	14 44.16	14 43.50	54 04.95	54 02.56
8	18 24 09.6	0.21	0.0007051	10 54 11.90	14 43.27	14 43.49	54 01.70	54 02.50
9	19 23 03.7	0.34	0.0008308	10 50 16.00	14 44.19	14 45.41	54 05.08	54 09.55
10	20 21 56.1	0.47	0.0009566	10 46 20.09	14 47.18	14 49.53	54 16.05	54 24.67
11	21 20 46.7	0.58	0.0010824	10 42 24.18	14 52.47	14 56.04	54 35.48	54 48.56
12	22 19 35.5	0.69	0.0012079	10 38 28.27	15 00.22	15 05.03	55 05.92	55 21.58
13	23 18 22.6	0.80	0.0013332	10 34 32.37	15 10.45	15 16.45	55 41.47	56 03.49
14	24 17 08.0	0.88	0.0014580	10 30 36.46	15 22.98	15 29.99	56 27.47	56 55.19
15	25 15 51.7	0.92	0.0015821	10 26 40.55	15 37.38	15 45.06	57 20.32	57 48.49
16	26 14 33.7	0.93	0.0017054	10 22 44.64	15 52.88	16 00.71	58 17.22	58 45.95
17	27 13 14.0	0.92	0.0018278	10 18 48.73	16 08.37	16 15.68	59 14.07	59 42.89
18	28 11 52.6	0.86	0.0019491	10 14 52.83	16 22.44	16 28.46	60 05.70	60 27.80
19	29 10 29.4	0.81	0.0020691	10 10 56.92	16 33.56	16 37.57	60 46.51	61 11.24
20	30 09 04.3	0.71	0.0021877	10 07 01.01	16 40.36	16 41.85	61 11.48	61 16.94
21	31 07 37.2	0.59	0.0023050	10 03 05.10	16 41.99	16 40.79	61 17.45	61 13.06
22	32 06 08.2	0.45	0.0024219	09 59 09.19	16 38.32	16 34.67	61 03.09	60 50.60
23	33 04 37.1	0.31	0.0025354	09 55 13.28	16 29.99	16 24.45	60 53.45	60 13.07
24	34 03 03.9	0.18	0.0026487	09 51 17.37	16 18.21	16 11.48	59 50.19	59 24.47
25	35 01 28.5	S. 0.05	0.0027608	09 47 21.46	16 04.42	15 57.19	58 59.54	58 31.04
26	35 59 51.0	N. 0.06	0.0028715	09 43 25.56	15 49.96	15 42.85	58 06.49	57 41.38
27	36 58 11.4	0.14	0.0029819	09 39 29.65	15 35.96	15 29.38	57 15.09	56 51.94
28	37 56 29.7	0.19	0.0030912	09 35 33.74	15 23.17	15 17.38	56 28.16	56 20.91
29	38 54 46.0	0.21	0.0031997	09 31 37.83	15 12.04	15 07.17	55 47.32	55 20.44
30	39 53 00.2	0.20	0.0033076	09 27 41.92	15 02.78	14 58.85	55 13.30	54 58.89
31	40 51 12.4	N. 0.17	0.0034147	09 23 46.01	14 55.38	14 52.36	54 46.16	54 35.07

MEAN TIME.

Day of the Month.	THE MOON'S						
	Longitude.		Latitude.		Age.	Meridian Passage.	
	oh.	12h.	oh.	12h.	oh.	Upper.	Lower.
	° ' "	° ' "	° ' "	° ' "	d	h m	h m
1	143 42 22.8	150 03 24.5	N. 4 49 36.1	N. 4 58 07.3	10.15	21 56.0	09 32.8
2	156 21 32.4	162 36 55.5	5 02 56.0	5 04 03.4	11.15	22 40.3	10 18.4
3	168 49 41.6	174 59 57.7	5 01 33.6	4 55 32.3	12.15	23 22.4	11 01.6
4	181 07 50.5	187 13 26.7	4 46 07.4	4 33 28.7	13.15	* *	11 43.0
5	193 16 53.2	199 18 18.3	4 17 47.5	3 59 16.8	14.15	00 03.5	12 23.7
6	205 17 51.3	211 15 43.5	3 38 10.9	3 14 44.8	15.15	00 44.2	13 04.7
7	217 12 08.4	223 07 21.5	2 49 14.6	2 21 56.9	16 15	01 25.5	13 46.6
8	229 01 41.2	234 55 28.3	1 53 08.9	1 23 08.0	17.15	02 08.1	14 30.2
9	240 49 06.5	246 43 02.6	N. 0 52 11.6	N. 0 20 37.7	18.15	02 52.7	15 16.0
10	252 37 45.3	258 33 46.3	S. 0 11 15.8	S. 0 43 10.9	19.15	03 39.7	16 04.1
11	264 31 39.3	270 31 59.8	1 14 49.3	1 45 52.3	20.15	04 29.1	16 54.7
12	276 35 25.0	282 42 32.6	2 16 00.6	2 44 54.5	21.15	05 20.6	17 46.9
13	288 54 00.7	295 10 26.3	3 12 13.4	3 37 36.1	22.15	06 13.3	18 39.9
14	301 32 25.0	308 00 29.4	4 00 40.1	4 21 03.0	23.15	07 06.5	19 32.9
15	314 35 07.7	321 16 42.2	4 38 21.0	4 52 10.8	24.15	07 59.2	20 25.2
16	328 05 28.3	335 01 31.9	5 02 09.6	5 07 55.7	25.15	08 51.1	21 16.8
17	342 04 49.0	349 15 03.7	5 09 10.1	5 05 37.4	26.15	09 42.4	22 07.9
18	356 31 48.2	3 54 22.0	4 57 07.4	4 43 36.1	27.15	10 33.4	22 59.2
19	11 21 53.5	18 53 20.4	4 25 07.5	4 01 53.9	28.15	11 25.3	23 51.8
20	26 27 32.8	34 03 15.6	3 34 16.2	3 02 43.8	29.15	12 18.8	* *
21	41 39 11.8	49 14 06.0	2 27 53.7	1 50 28.7	0.77	13 14.8	00 46.4
22	56 46 47.2	64 16 11.6	S. 1 11 15.6	S. 0 31 02.7	1.77	14 13.7	01 43.9
23	71 41 24.8	79 01 42.6	N. 0 09 21.7	N. 0 49 12.0	2.77	15 14.8	02 44.1
24	86 16 31.5	93 25 28.7	1 27 46.2	2 04 27.1	3.77	16 16.6	03 45.8
25	100 28 21.7	107 25 06.4	2 38 43.2	3 10 08.2	4.77	17 16.9	04 47.0
26	114 15 46.6	121 00 32.3	3 38 21.4	4 03 07.0	5.77	18 13.6	05 45.7
27	127 39 38.2	134 13 22.9	4 24 13.7	4 41 34.1	6.77	19 06.2	06 40.5
28	140 42 07.4	147 06 13.8	4 55 04.1	5 04 42.6	7.77	19 54.7	07 31.0
29	153 26 05.3	159 42 04.7	5 10 30.7	5 12 31.8	8.77	20 39.6	08 17.6
30	165 54 34.6	172 03 56.4	5 10 50.9	5 05 34.8	9.77	21 22.1	09 01.1
31	178 10 31.0	184 14 37.2	N. 4 56 51.6	N. 4 44 50.8	10.77	22 03.0	09 42.6

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 100.	Declination.	Var. in 100.	Hour	Right Ascension	Var. in 100.	Declination.	Var. in 100.
Sunday 1.					Tuesday 3.				
	h m		° ' "			h m		° ' "	
00	00 50 49.1	21.134	N. 18 10 27.5	99.10	00	11 26 53.65	18.628	N. 9 02 35.2	125.18
01	01 52 56.67	21.130	18 05 30.5	99.89	01	11 28 47.12	18.906	8 52 23.2	125.48
02	02 55 02.09	21.275	17 50 28.8	100.68	02	11 30 41.20	18.963	8 37 20.4	125.78
03	03 57 05.97	21.620	17 40 22.4	101.45	03	11 32 34.68	18.933	8 24 53.9	126.05
04	04 59 14.93	20.967	17 30 11.4	102.21	04	11 34 28.19	18.903	8 12 16.8	126.33
05	10 01 20.57	20.913	17 19 55.9	102.96	05	11 36 21.51	18.873	7 59 38.0	126.59
06	10 03 25.89	20.850	17 09 35.9	103.70	06	11 38 14.66	18.843	7 46 57.7	126.84
07	10 05 30.88	20.806	16 59 11.5	104.43	07	11 40 07.63	18.814	7 34 15.9	127.08
08	10 07 35.56	20.753	16 48 42.7	105.15	08	11 42 00.43	18.786	7 21 32.7	127.32
09	10 09 39.92	20.701	16 38 09.7	105.86	09	11 43 53.06	18.750	7 08 48.1	127.55
10	10 11 43.97	20.649	16 27 32.4	106.55	10	11 45 45.54	18.733	6 56 02.1	127.77
11	10 13 47.71	20.598	16 16 51.1	107.23	11	11 47 37.85	18.705	6 43 14.9	127.97
12	10 15 51.14	20.547	16 06 05.6	107.91	12	11 49 30.00	18.679	6 30 26.5	128.17
13	10 17 54.27	20.496	15 55 16.2	108.57	13	11 51 22.00	18.655	6 17 36.9	128.37
14	10 19 57.09	20.445	15 44 22.8	109.23	14	11 53 13.86	18.630	6 04 46.1	128.55
15	10 21 59.61	20.395	15 33 25.5	109.86	15	11 55 05.56	18.606	5 51 54.3	128.72
16	10 24 01.83	20.346	15 22 24.5	110.48	16	11 56 57.13	18.583	5 39 01.5	128.88
17	10 26 03.76	20.298	15 11 19.7	111.11	17	11 58 48.56	18.560	5 26 07.7	129.04
18	10 28 05.40	20.249	15 00 11.2	111.72	18	12 00 39.85	18.538	5 13 13.0	129.19
19	10 30 06.75	20.201	14 48 59.1	112.32	19	12 02 31.01	18.516	5 00 17.4	129.33
20	10 32 07.81	20.153	14 37 43.4	112.90	20	12 04 22.04	18.495	4 47 21.0	129.47
21	10 34 08.58	20.105	14 26 24.3	113.48	21	12 06 12.95	18.475	4 34 23.8	129.59
22	10 36 09.07	20.059	14 15 01.7	114.04	22	12 08 03.74	18.455	4 21 25.9	129.70
23	10 38 09.29	20.013	N. 14 03 35.8	114.59	23	12 09 54.41	18.435	N. 4 08 27.4	129.80
Monday 2.					Wednesday 4.				
	h m		° ' "			h m		° ' "	
00	10 40 09.22	19.967	N. 13 52 06.6	115.13	00	12 11 44.96	18.417	N. 3 55 28.0	129.90
01	10 42 08.89	19.922	13 40 34.2	115.68	01	12 13 35.41	18.398	3 42 28.0	129.99
02	10 44 08.28	19.877	13 28 58.5	116.20	02	12 15 25.74	18.381	3 29 28.4	130.07
03	10 46 07.41	19.833	13 17 19.8	116.70	03	12 17 15.98	18.365	3 16 28.0	130.14
04	10 48 06.27	19.789	13 05 38.1	117.21	04	12 19 06.12	18.348	3 03 26.0	130.22
05	10 50 04.88	19.746	12 53 53.3	117.71	05	12 20 56.16	18.332	2 50 23.5	130.27
06	10 52 03.22	19.703	12 42 05.6	118.18	06	12 22 46.10	18.317	2 37 21.5	130.32
07	10 54 01.31	19.661	12 30 15.1	118.66	07	12 24 35.96	18.303	2 24 21.4	130.36
08	10 55 59.15	19.619	12 18 21.7	119.13	08	12 26 25.74	18.289	2 11 19.2	130.38
09	10 57 56.74	19.578	12 06 25.6	119.57	09	12 28 15.43	18.275	1 58 16.0	130.42
10	10 59 54.09	19.538	11 54 26.9	120.01	10	12 30 05.04	18.263	1 45 14.0	130.43
11	11 01 51.19	19.498	11 42 25.5	120.45	11	12 31 54.58	18.251	1 32 11.0	130.43
12	11 03 48.06	19.458	11 30 21.5	120.88	12	12 33 44.05	18.239	1 19 09.0	130.43
13	11 05 44.69	19.419	11 18 15.0	121.28	13	12 35 33.45	18.228	1 06 07.4	130.43
14	11 07 41.09	19.381	11 06 06.1	121.68	14	12 37 22.79	18.218	0 53 05.0	130.42
15	11 09 37.26	19.343	10 53 54.8	122.08	15	12 39 12.06	18.208	0 40 01.4	130.39
16	11 11 33.20	19.306	10 41 41.2	122.46	16	12 41 01.28	18.198	0 26 50.1	130.37
17	11 13 28.93	19.269	10 29 25.3	122.83	17	12 42 50.44	18.189	0 13 57.0	130.32
18	11 15 24.43	19.233	10 17 07.2	123.20	18	12 44 39.55	18.182	N. 0 02 55.3	130.27
19	11 17 19.72	19.197	10 04 46.9	123.56	19	12 46 28.62	18.174	S. 0 12 06.2	130.23
20	11 19 14.79	19.162	9 52 24.5	123.90	20	12 48 17.64	18.168	0 25 07.4	130.16
21	11 21 09.66	19.128	9 40 00.1	124.23	21	12 50 06.63	18.161	0 38 08.1	130.08
22	11 23 04.33	19.094	9 27 33.7	124.56	22	12 51 55.57	18.155	0 51 08.4	130.01
23	11 24 58.79	19.060	9 15 05.4	124.88	23	12 53 44.49	18.150	1 04 08.2	129.93
24	11 26 53.05	19.028	N. 9 02 35.2	125.18	24	12 55 33.37	18.145	S. 1 17 07.5	129.83

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Thursday 5.					Saturday 7.				
	h m s	s	° "	"		h m s	s	° "	"
00	12 55 33.37	18.145	S. 1 17 07.5	129.83	00	14 23 10.24	18.564	S. 11 15 16.7	116.56
01	12 57 22.23	18.141	1 30 06.2	129.73	01	14 25 01.69	18.585	11 26 54.7	116.09
02	12 59 11.06	18.138	1 43 04.3	129.63	02	14 26 53.26	18.607	11 38 29.8	115.63
03	13 00 59.88	18.135	1 56 01.7	129.50	03	14 28 44.97	18.629	11 50 02.2	115.16
04	13 02 48.68	18.133	2 08 58.3	129.38	04	14 30 36.81	18.651	12 01 31.7	114.68
05	13 04 37.47	18.131	2 21 54.2	129.25	05	14 32 28.78	18.674	12 12 58.3	114.19
06	13 06 26.25	18.129	2 34 49.3	129.12	06	14 34 20.90	18.698	12 24 22.0	113.70
07	13 08 15.02	18.128	2 47 43.6	128.97	07	14 36 13.16	18.722	12 35 42.7	113.19
08	13 10 03.79	18.128	3 00 36.9	128.81	08	14 38 05.56	18.746	12 47 00.3	112.68
09	13 11 52.56	18.129	3 13 29.3	128.65	09	14 39 58.11	18.771	12 58 14.9	112.17
10	13 13 41.34	18.130	3 26 20.7	128.48	10	14 41 50.81	18.796	13 09 26.3	111.64
11	13 15 30.12	18.132	3 39 11.0	128.30	11	14 43 43.66	18.821	13 20 34.6	111.12
12	13 17 18.92	18.134	3 52 00.3	128.12	12	14 45 36.66	18.847	13 31 39.7	110.58
13	13 19 07.73	18.137	4 04 48.4	127.93	13	14 47 29.82	18.873	13 42 41.5	110.03
14	13 20 56.56	18.139	4 17 35.4	127.73	14	14 49 23.14	18.901	13 53 40.0	109.48
15	13 22 45.40	18.143	4 30 21.1	127.52	15	14 51 16.63	18.928	14 04 35.2	108.92
16	13 24 34.28	18.148	4 43 05.6	127.31	16	14 53 10.27	18.955	14 15 27.0	108.35
17	13 26 23.18	18.153	4 55 48.8	127.08	17	14 55 04.09	18.983	14 26 15.4	107.78
18	13 28 12.11	18.158	5 08 30.6	126.85	18	14 56 58.07	19.012	14 37 00.3	107.19
19	13 30 01.08	18.164	5 21 11.0	126.62	19	14 58 52.23	19.041	14 47 41.7	106.59
20	13 31 50.08	18.171	5 33 50.0	126.38	20	15 00 46.56	19.069	14 58 19.4	105.99
21	13 33 39.13	18.178	5 46 27.5	126.12	21	15 02 41.06	19.099	15 08 53.6	105.39
22	13 35 28.22	18.185	5 59 03.4	125.86	22	15 04 35.75	19.129	15 19 24.1	104.78
23	13 37 17.35	18.193	S. 6 11 37.8	125.60	23	15 06 30.61	19.159	S. 15 29 50.9	104.16
Friday 6.					Sunday 8.				
00	13 39 06.54	18.203	S. 6 24 10.6	125.33	00	15 08 25.66	19.190	S. 15 40 14.0	103.53
01	13 40 55.78	18.212	6 36 41.7	125.04	01	15 10 20.89	19.221	15 50 33.3	102.89
02	13 42 45.08	18.221	6 49 11.1	124.75	02	15 12 16.31	19.253	16 00 48.7	102.24
03	13 44 34.43	18.231	7 01 38.7	124.46	03	15 14 11.92	19.284	16 11 00.2	101.60
04	13 46 23.85	18.243	7 14 04.6	124.16	04	15 16 07.72	19.317	16 21 07.9	100.94
05	13 48 13.34	18.253	7 26 28.6	123.84	05	15 18 03.72	19.348	16 31 11.5	100.27
06	13 50 02.89	18.265	7 38 50.7	123.53	06	15 19 59.90	19.381	16 41 11.1	99.60
07	13 51 52.52	18.278	7 51 10.9	123.21	07	15 21 56.29	19.414	16 51 06.7	98.92
08	13 53 42.23	18.291	8 03 29.2	122.88	08	15 23 52.87	19.447	17 00 58.1	98.23
09	13 55 32.01	18.303	8 15 45.4	122.53	09	15 25 49.65	19.481	17 10 45.4	97.53
10	13 57 21.87	18.318	8 27 59.5	122.18	10	15 27 46.64	19.515	17 20 28.5	96.83
11	13 59 11.82	18.333	8 40 11.6	121.83	11	15 29 43.83	19.548	17 30 07.4	96.12
12	14 01 01.86	18.348	8 52 21.5	121.47	12	15 31 41.22	19.583	17 39 41.9	95.39
13	14 02 51.99	18.363	9 04 29.2	121.10	13	15 33 38.82	19.618	17 49 12.1	94.67
14	14 04 42.21	18.378	9 16 34.7	120.73	14	15 35 36.63	19.653	17 58 37.9	93.93
15	14 06 32.53	18.395	9 28 37.9	120.34	15	15 37 34.66	19.688	18 07 59.3	93.20
16	14 08 22.95	18.412	9 40 38.8	119.95	16	15 39 32.89	19.723	18 17 16.3	92.45
17	14 10 13.47	18.428	9 52 37.3	119.55	17	15 41 31.34	19.759	18 26 28.7	91.69
18	14 12 04.09	18.447	10 04 33.4	119.14	18	15 43 30.00	19.795	18 35 36.6	90.93
19	14 13 54.83	18.466	10 16 27.0	118.73	19	15 45 28.88	19.831	18 44 39.8	90.15
20	14 15 45.68	18.484	10 28 18.1	118.31	20	15 47 27.97	19.868	18 53 38.4	89.38
21	14 17 36.64	18.503	10 40 06.7	117.88	21	15 49 27.29	19.904	19 02 32.3	88.59
22	14 19 27.72	18.523	10 51 52.7	117.44	22	15 51 26.82	19.941	19 11 21.5	87.80
23	14 21 18.92	18.543	11 03 36.0	117.00	23	15 53 26.58	19.978	19 20 05.9	86.99
24	14 23 10.24	18.564	S. 11 15 16.7	116.56	24	15 55 26.56	20.016	S. 19 28 45.4	86.18

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Monday 9.					Wednesday 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	15 55 26.56	20.016	S. 19 28 45.4	86.18	00	17 35 55.60	21.829	S. 24 34 56.1	38.0
01	15 57 26.77	20.053	19 37 20.0	85.37	01	17 38 06.68	21.863	24 38 44.4	37.7
02	15 59 27.19	20.090	19 45 49.8	84.54	02	17 40 17.95	21.896	24 42 25.7	36.7
03	16 01 27.85	20.128	19 54 14.5	83.71	03	17 42 29.43	21.930	24 45 59.9	35.1
04	16 03 28.73	20.166	20 02 34.3	82.87	04	17 44 41.11	21.963	24 49 27.2	33.9
05	16 05 29.84	20.204	20 10 48.9	82.02	05	17 46 52.98	21.995	24 52 47.3	32.7
06	16 07 31.18	20.242	20 18 58.5	81.17	06	17 49 05.05	22.028	24 56 02.3	31.1
07	16 09 32.74	20.280	20 27 02.9	80.30	07	17 51 17.31	22.059	24 59 06.1	30.1
08	16 11 34.54	20.319	20 35 02.1	79.43	08	17 53 29.76	22.090	25 02 04.8	29.1
09	16 13 36.57	20.357	20 42 56.1	78.55	09	17 55 42.39	22.122	25 04 56.2	27.9
10	16 15 38.82	20.395	20 50 44.7	77.67	10	17 57 55.22	22.153	25 07 40.3	26.7
11	16 17 41.31	20.435	20 58 28.1	76.78	11	18 00 08.22	22.182	25 10 17.2	25.5
12	16 19 44.04	20.473	21 06 06.0	75.87	12	18 02 21.40	22.212	25 12 46.7	24.3
13	16 21 46.99	20.512	21 13 38.5	74.97	13	18 04 34.76	22.242	25 15 08.9	23.1
14	16 23 50.18	20.551	21 21 05.6	74.05	14	18 06 48.30	22.271	25 17 23.6	21.8
15	16 25 53.60	20.590	21 28 27.1	73.12	15	18 09 02.01	22.298	25 19 30.9	20.6
16	16 27 57.26	20.629	21 35 43.0	72.18	16	18 11 15.88	22.326	25 21 30.8	19.3
17	16 30 01.15	20.668	21 42 53.3	71.25	17	18 13 29.92	22.354	25 23 23.2	18.1
18	16 32 05.27	20.706	21 49 58.0	70.31	18	18 15 44.13	22.381	25 25 08.1	16.8
19	16 34 09.62	20.745	21 56 57.0	69.36	19	18 17 58.49	22.407	25 26 45.4	15.5
20	16 36 14.21	20.785	22 03 50.3	68.40	20	18 20 13.01	22.433	25 28 15.1	14.3
21	16 38 19.04	20.824	22 10 37.8	67.43	21	18 22 27.68	22.458	25 29 37.3	13.0
22	16 40 24.10	20.863	22 17 19.4	66.45	22	18 24 42.51	22.483	25 30 51.8	11.7
23	16 42 29.39	20.901	S. 22 23 55.2	65.48	23	18 26 57.48	22.508	S. 25 31 58.6	10.5
Tuesday 10.					Thursday 12.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	16 44 34.91	20.940	S. 22 30 25.1	64.48	00	18 29 12.60	22.532	S. 25 32 57.8	09.2
01	16 46 40.67	20.979	22 36 49.0	63.48	01	18 31 27.86	22.555	25 33 49.3	07.9
02	16 48 46.66	21.018	22 43 06.9	62.48	02	18 33 43.26	22.578	25 34 33.0	06.6
03	16 50 52.88	21.056	22 49 18.8	61.47	03	18 35 58.79	22.600	25 35 09.0	05.3
04	16 52 59.33	21.095	22 55 24.5	60.45	04	18 38 14.46	22.622	25 35 37.1	04.0
05	16 55 06.02	21.133	23 01 24.2	59.43	05	18 40 30.25	22.643	25 35 57.5	02.7
06	16 57 12.93	21.171	23 07 17.6	58.39	06	18 42 46.17	22.663	25 36 10.1	01.4
07	16 59 20.07	21.210	23 13 04.9	57.36	07	18 45 02.21	22.683	25 36 14.8	00.1
08	17 01 27.45	21.248	23 18 45.9	56.30	08	18 47 18.37	22.703	25 36 11.7	01.1
09	17 03 35.05	21.285	23 24 20.5	55.25	09	18 49 34.64	22.721	25 36 00.6	02.5
10	17 05 42.87	21.323	23 29 48.9	54.19	10	18 51 51.02	22.739	25 35 41.7	03.8
11	17 07 50.92	21.361	23 35 10.8	53.12	11	18 54 07.51	22.757	25 35 14.8	05.1
12	17 09 59.20	21.398	23 40 26.3	52.04	12	18 56 24.10	22.774	25 34 40.0	06.4
13	17 12 07.70	21.436	23 45 35.3	50.96	13	18 58 40.80	22.791	25 33 57.2	07.7
14	17 14 16.43	21.473	23 50 37.8	49.88	14	19 00 57.59	22.806	25 33 06.5	09.1
15	17 16 25.38	21.509	23 55 33.8	48.78	15	19 03 14.47	22.821	25 32 07.7	10.4
16	17 18 34.54	21.546	24 00 23.2	47.67	16	19 05 31.44	22.836	25 31 00.9	11.8
17	17 20 43.93	21.583	24 05 05.8	46.56	17	19 07 48.50	22.851	25 29 46.1	13.1
18	17 22 53.53	21.618	24 09 41.9	45.46	18	19 10 05.65	22.864	25 28 23.3	14.4
19	17 25 03.34	21.653	24 14 11.3	44.34	19	19 12 22.87	22.876	25 26 52.4	15.8
20	17 27 13.37	21.689	24 18 34.0	43.21	20	19 14 40.16	22.888	25 25 13.4	17.1
21	17 29 23.61	21.725	24 22 49.8	42.07	21	19 16 57.53	22.901	25 23 26.4	18.5
22	17 31 34.07	21.760	24 26 58.8	40.93	22	19 19 14.97	22.912	25 21 31.3	19.8
23	17 33 44.73	21.794	24 31 00.9	39.78	23	19 21 32.47	22.922	25 19 28.1	21.2
24	17 35 55.60	21.829	S. 24 34 56.1	38.63	24	19 23 50.03	22.932	S. 25 17 16.8	22.5

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Friday 13.					Sunday 15.				
	h m s	s	° "	"		h m s	s	° "	"
0	19 23 50.03	22.932	S. 25 17 16.8	22.56	00	21 13 59.56	22.793	S. 20 53 48.8	86.44
01	19 26 07.65	22.941	25 14 57.4	23.92	01	21 16 16.28	22.780	20 45 06.4	87.68
02	19 28 25.32	22.949	25 12 29.8	25.28	02	21 18 32.92	22.768	20 36 16.6	88.93
03	19 30 43.04	22.957	25 09 54.1	26.63	03	21 20 49.49	22.755	20 27 19.3	90.17
04	19 33 00.80	22.964	25 07 10.3	27.98	04	21 23 05.98	22.743	20 18 14.6	91.40
05	19 35 18.61	22.972	25 04 18.3	29.34	05	21 25 22.40	22.730	20 09 02.5	92.63
06	19 37 36.46	22.978	25 01 18.2	30.69	06	21 27 38.74	22.717	19 59 43.0	93.86
07	19 39 54.35	22.983	24 58 10.0	32.05	07	21 29 55.00	22.703	19 50 16.2	95.08
08	19 42 12.26	22.988	24 54 53.6	33.42	08	21 32 11.18	22.690	19 40 42.1	96.28
09	19 44 30.21	22.993	24 51 29.0	34.78	09	21 34 27.28	22.678	19 31 00.8	97.48
10	19 46 48.18	22.997	24 47 56.3	36.13	10	21 36 43.31	22.664	19 21 12.3	98.68
11	19 49 06.17	23.000	24 44 15.4	37.49	11	21 38 59.25	22.650	19 11 16.7	99.87
12	19 51 24.18	23.003	24 40 26.4	38.84	12	21 41 15.11	22.637	19 01 13.9	101.06
13	19 53 42.21	23.005	24 36 29.3	40.20	13	21 43 30.89	22.624	18 51 04.0	102.23
14	19 56 00.24	23.007	24 32 24.0	41.57	14	21 45 46.60	22.611	18 40 47.1	103.39
15	19 58 18.29	23.008	24 28 10.5	42.93	15	21 48 02.22	22.596	18 30 23.3	104.56
16	20 00 36.34	23.008	24 23 48.9	44.28	16	21 50 17.75	22.583	18 19 52.4	105.72
17	20 02 54.39	23.008	24 19 19.1	45.64	17	21 52 33.21	22.570	18 09 14.7	106.86
18	20 05 12.44	23.008	24 14 41.2	46.99	18	21 54 48.59	22.556	17 58 30.1	107.99
19	20 07 30.49	23.008	24 09 55.2	48.34	19	21 57 03.88	22.542	17 47 38.8	109.13
20	20 09 48.53	23.005	24 05 01.1	49.69	20	21 59 19.09	22.529	17 36 40.6	110.25
21	20 12 06.55	23.003	23 59 58.9	51.04	21	22 01 34.23	22.516	17 25 35.8	111.36
22	20 14 24.57	23.001	23 54 48.6	52.39	22	22 03 49.28	22.503	17 14 24.3	112.48
23	20 16 42.56	22.998	S. 23 49 30.2	53.74	23	22 06 04.26	22.489	S. 17 03 06.1	113.58
Saturday 14.					Monday 16.				
00	20 19 00.54	22.994	S. 23 44 03.7	55.08	00	22 08 19.15	22.476	S. 16 51 41.4	114.66
01	20 21 18.49	22.990	23 38 29.2	56.43	01	22 10 33.97	22.463	16 40 10.2	115.74
02	20 23 36.42	22.986	23 32 46.6	57.78	02	22 12 48.71	22.450	16 28 32.5	116.82
03	20 25 54.32	22.981	23 26 55.9	59.11	03	22 15 03.37	22.437	16 16 48.4	117.88
04	20 28 12.19	22.976	23 20 57.3	60.44	04	22 17 17.95	22.424	16 04 58.0	118.93
05	20 30 30.03	22.970	23 14 50.6	61.78	05	22 19 32.46	22.411	15 53 01.3	119.98
06	20 32 47.83	22.964	23 08 36.0	63.11	06	22 21 46.90	22.401	15 40 58.3	121.01
07	20 35 05.60	22.958	23 02 13.3	64.44	07	22 24 01.27	22.388	15 28 49.2	122.03
08	20 37 23.32	22.950	22 55 42.7	65.76	08	22 26 15.56	22.376	15 16 33.9	123.05
09	20 39 41.00	22.943	22 49 04.2	67.08	09	22 28 29.78	22.365	15 04 12.6	124.05
10	20 41 58.63	22.935	22 42 17.8	68.40	10	22 30 43.94	22.353	14 51 45.3	125.05
11	20 44 16.22	22.927	22 35 23.4	69.72	11	22 32 58.02	22.342	14 39 12.0	126.03
12	20 46 33.75	22.918	22 28 21.2	71.03	12	22 35 12.04	22.332	14 26 32.9	127.01
13	20 48 51.23	22.909	22 21 11.1	72.33	13	22 37 26.00	22.321	14 13 47.9	127.98
14	20 51 08.66	22.900	22 13 53.2	73.63	14	22 39 39.89	22.309	14 00 57.2	128.93
15	20 53 26.03	22.891	22 06 27.5	74.93	15	22 41 53.71	22.299	13 48 00.8	129.88
16	20 55 43.35	22.881	21 58 54.0	76.23	16	22 44 07.48	22.290	13 34 58.7	130.81
17	20 58 00.60	22.870	21 51 12.7	77.53	17	22 46 21.19	22.281	13 21 51.1	131.73
18	21 00 17.79	22.860	21 43 23.7	78.81	18	22 48 34.85	22.272	13 08 37.9	132.65
19	21 02 34.92	22.850	21 35 27.0	80.09	19	22 50 48.45	22.263	12 55 19.3	133.54
20	21 04 51.99	22.838	21 27 22.6	81.37	20	22 53 02.00	22.254	12 41 55.4	134.43
21	21 07 08.98	22.827	21 19 10.6	82.64	21	22 55 15.50	22.246	12 28 26.1	135.32
22	21 09 25.91	22.816	21 10 50.9	83.91	22	22 57 28.95	22.238	12 14 51.6	136.18
23	21 11 42.77	22.804	21 02 23.7	85.18	23	22 59 42.36	22.231	12 01 12.0	137.03
24	21 13 59.56	22.793	S. 20 53 48.8	86.44	24	23 01 55.72	22.223	S. 11 47 27.2	137.88

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in hour.	Declination.	Var. in hour.	Hour	Right Ascension.	Var. in hour.	Declination	Var. in hour.
Tuesday 17.					Thursday 19.				
00	23 01 55.72	22.221 S.	11 47 37.2	137.88	00	02 48 42.16	22.482 N.	0 25 47.3	161.80
01	23 01 59.24	22.217	11 33 37.4	135.71	01	00 50 57.11	22.522	2 41 52.4	161.90
02	23 06 22.32	22.216	11 19 42.7	139.53	02	00 53 12.18	22.522	2 51 12.1	161.98
03	23 08 35.56	22.221	11 05 43.1	140.34	03	00 55 27.37	22.515	3 01 22.1	162.03
04	23 10 48.77	22.169	10 51 38.6	141.14	04	00 57 42.70	22.515	3 11 31.5	162.08
05	23 15 01.05	22.194	10 37 29.4	141.92	05	00 59 58.25	22.588	3 21 41.1	162.11
06	23 15 15.10	22.192	10 23 15.6	142.68	06	01 02 13.75	22.612	3 31 50.8	162.12
07	23 17 28.23	22.190	10 08 57.2	143.44	07	01 04 29.49	22.635	3 42 00.4	162.11
08	23 19 41.33	22.182	9 54 34.3	144.18	08	01 06 45.37	22.659	3 52 10.1	162.08
09	23 21 54.41	22.173	9 40 07.0	144.92	09	01 09 01.40	22.682	4 02 19.4	162.02
10	23 24 07.47	22.176	9 25 35.3	145.63	10	01 11 17.58	22.729	4 12 28.8	161.95
11	23 26 20.55	22.173	9 10 59.4	146.33	11	01 13 33.91	22.736	4 22 38.2	161.87
12	23 28 33.52	22.171	8 56 19.3	147.03	12	01 15 50.41	22.763	4 32 47.6	161.76
13	23 30 46.57	22.170	8 41 35.1	147.70	13	01 18 07.07	22.791	4 42 57.1	161.63
14	23 32 59.59	22.160	8 26 46.9	148.37	14	01 20 23.90	22.818	4 53 06.5	161.48
15	23 35 12.60	22.169	8 11 54.7	149.02	15	01 22 40.80	22.827	5 03 15.9	161.32
16	23 37 25.62	22.160	7 56 58.7	149.65	16	01 24 58.06	22.877	5 13 25.3	161.13
17	23 39 38.63	22.160	7 41 58.0	150.28	17	01 27 15.41	22.904	5 23 34.7	160.93
18	23 41 51.66	22.172	7 26 55.4	150.88	18	01 29 32.95	22.938	5 33 44.1	160.70
19	23 44 04.69	22.173	7 11 48.3	151.48	19	01 31 50.66	22.968	5 43 53.5	160.45
20	23 46 17.73	22.175	6 56 37.7	152.05	20	01 34 08.56	23.000	5 54 02.9	160.19
21	23 48 30.79	22.177	6 41 25.7	152.61	21	01 36 26.66	23.013	6 04 12.3	159.91
22	23 50 43.87	22.182	6 26 06.4	153.16	22	01 38 44.95	23.065	6 14 21.7	159.60
23	23 52 56.07	22.184 S.	6 10 45.8	153.70	23	01 41 03.44	23.098 N.	6 24 31.1	159.28
Wednesday 18.					Friday 20.				
00	23 55 10.10	22.191 S.	5 55 22.0	154.22	00	01 43 22.13	23.133 N.	6 34 40.5	158.93
01	23 57 23.26	22.195	5 39 55.2	154.72	01	01 45 41.03	23.197	6 44 49.9	158.57
02	23 59 36.44	22.201	5 24 25.4	155.21	02	01 48 00.13	23.202	6 54 59.3	158.18
03	00 01 49.67	22.205	5 08 52.7	155.68	03	01 50 19.45	23.235	7 05 08.7	157.78
04	00 04 02.93	22.214	4 53 17.2	156.13	04	01 52 38.08	23.273	7 15 18.1	157.34
05	00 06 16.24	22.222	4 37 39.1	156.58	05	01 54 58.73	23.311	7 25 27.5	156.89
06	00 08 29.59	22.230	4 21 58.3	157.01	06	01 57 18.71	23.358	7 35 36.9	156.43
07	00 10 43.00	22.239	4 06 15.0	157.41	07	01 59 38.90	23.384	7 45 46.3	155.94
08	00 12 56.46	22.248	3 50 29.4	157.80	08	02 01 59.32	23.423	7 55 55.7	155.43
09	00 15 09.97	22.258	3 34 41.4	158.18	09	02 04 19.97	23.462	8 06 05.1	154.91
10	00 17 23.55	22.268	3 18 51.2	158.54	10	02 06 40.86	23.500	8 16 14.5	154.35
11	00 19 37.19	22.279	3 02 58.9	158.89	11	02 09 01.97	23.539	8 26 23.9	153.78
12	00 21 50.90	22.292	2 47 04.5	159.23	12	02 11 23.33	23.580	8 36 33.3	153.20
13	00 24 04.69	22.303	2 31 08.2	159.53	13	02 13 44.93	23.619	8 46 42.7	152.58
14	00 26 18.54	22.316	2 15 10.2	159.82	14	02 16 06.76	23.660	8 56 52.1	151.95
15	00 28 32.48	22.330	1 59 10.4	160.10	15	02 18 28.85	23.702	9 07 01.5	151.30
16	00 30 46.50	22.345	1 43 09.0	160.36	16	02 20 51.18	23.742	9 17 10.9	150.63
17	00 33 00.62	22.360	1 27 06.1	160.60	17	02 23 13.75	23.783	9 27 20.3	149.94
18	00 35 14.82	22.375	1 11 01.8	160.82	18	02 25 36.58	23.827	9 37 29.7	149.22
19	00 37 29.12	22.391	0 54 56.3	161.03	19	02 27 59.67	23.868	9 47 39.1	148.48
20	00 39 43.51	22.408	0 38 49.5	161.22	20	02 30 23.00	23.911	9 57 48.5	147.74
21	00 41 58.01	22.420	0 22 41.7	161.38	21	02 32 46.60	23.955	10 07 57.9	146.97
22	00 44 12.62	22.433 S.	0 06 32.9	161.54	22	02 35 10.46	23.998	10 18 07.3	146.17
23	00 46 27.33	22.462 N.	0 09 36.8	161.68	23	02 37 34.57	24.041	10 28 16.7	145.35
24	00 48 42.10	22.482 N.	0 25 47.3	161.80	24	02 39 58.95	24.085 N.	10 38 26.1	144.52

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Saturday 21.					Monday 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	02 39 58.95	24.085	N. 12 59 23.7	144.52	00	04 40 34.32	26.031	N. 22 21 06.1	83.12
01	02 42 23.59	24.129	13 13 48.3	143.66	01	04 43 10.59	26.058	22 29 19.9	81.48
02	02 44 48.50	24.173	13 28 07.6	142.78	02	04 45 47.02	26.084	22 37 23.8	79.82
03	02 47 13.67	24.218	13 42 21.7	141.89	03	04 48 23.60	26.109	22 45 17.7	78.16
04	02 49 39.11	24.262	13 56 30.3	140.98	04	04 51 00.33	26.133	22 53 01.7	76.49
05	02 52 04.81	24.307	14 10 33.4	140.04	05	04 53 37.19	26.155	23 00 35.6	74.81
06	02 54 30.79	24.352	14 24 30.8	139.08	06	04 56 14.19	26.178	23 07 59.4	73.13
07	02 56 57.03	24.396	14 38 22.4	138.11	07	04 58 51.32	26.198	23 15 13.1	71.43
08	02 59 23.54	24.442	14 52 08.1	137.12	08	05 01 28.57	26.218	23 22 16.6	69.73
09	03 01 50.33	24.487	15 05 47.8	136.10	09	05 04 05.93	26.236	23 29 09.8	68.02
10	03 04 17.38	24.531	15 19 21.3	135.07	10	05 06 43.40	26.253	23 35 52.8	66.30
11	03 06 44.70	24.577	15 32 48.6	134.02	11	05 09 20.96	26.268	23 42 25.4	64.57
12	03 09 12.30	24.623	15 46 09.5	132.95	12	05 11 58.62	26.284	23 48 47.6	62.83
13	03 11 40.17	24.667	15 59 24.0	131.86	13	05 14 36.37	26.298	23 54 59.4	61.10
14	03 14 08.30	24.712	16 12 31.8	130.74	14	05 17 14.19	26.309	24 01 00.8	59.35
15	03 16 36.71	24.758	16 25 32.9	129.61	15	05 19 52.08	26.321	24 06 51.6	57.60
16	03 19 05.39	24.803	16 38 27.1	128.46	16	05 22 30.04	26.331	24 12 32.0	55.85
17	03 21 34.34	24.848	16 51 14.4	127.30	17	05 25 08.05	26.339	24 18 01.8	54.08
18	03 24 03.56	24.892	17 03 54.7	126.12	18	05 27 46.11	26.346	24 23 21.0	52.33
19	03 26 33.04	24.936	17 16 27.8	124.92	19	05 30 24.20	26.352	24 28 29.7	50.56
20	03 29 02.79	24.980	17 28 53.7	123.70	20	05 33 02.33	26.357	24 33 27.7	48.78
21	03 31 32.80	25.023	17 41 12.2	122.46	21	05 35 40.48	26.359	24 38 15.1	47.02
22	03 34 03.07	25.068	17 53 23.2	121.20	22	05 38 18.64	26.362	24 42 51.9	45.23
23	03 36 33.61	25.112	N. 18 05 26.6	119.93	23	05 40 56.82	26.363	N. 24 47 17.9	43.45
Sunday 22.					Tuesday 24.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	03 39 04.41	25.155	N. 18 17 22.3	118.64	00	05 43 34.99	26.362	N. 24 51 33.3	41.68
01	03 41 35.47	25.198	18 29 10.3	117.33	01	05 46 13.16	26.359	24 55 38.0	39.89
02	03 44 06.78	25.240	18 40 50.3	116.01	02	05 48 51.30	26.355	24 59 32.0	38.10
03	03 46 38.35	25.283	18 52 22.4	114.67	03	05 51 29.42	26.351	25 03 15.2	36.32
04	03 49 10.17	25.324	19 03 46.3	113.31	04	05 54 07.51	26.344	25 06 47.8	34.53
05	03 51 42.24	25.365	19 15 02.1	111.93	05	05 56 45.55	26.337	25 10 09.6	32.75
06	03 54 14.55	25.406	19 26 09.5	110.54	06	05 59 23.55	26.328	25 13 20.8	30.97
07	03 56 47.11	25.447	19 37 08.6	109.14	07	06 02 01.48	26.317	25 16 21.2	29.18
08	03 59 19.91	25.487	19 47 59.2	107.73	08	06 04 39.35	26.305	25 19 11.0	27.40
09	04 01 52.95	25.526	19 58 41.3	106.29	09	06 07 17.14	26.292	25 21 50.0	25.62
10	04 04 26.22	25.564	20 09 14.7	104.83	10	06 09 54.85	26.278	25 24 18.4	23.83
11	04 06 59.72	25.603	20 19 39.3	103.37	11	06 12 32.47	26.262	25 26 36.0	22.05
12	04 09 33.45	25.640	20 29 55.1	101.89	12	06 15 09.99	26.244	25 28 43.0	20.28
13	04 12 07.40	25.677	20 40 02.0	100.40	13	06 17 47.40	26.225	25 30 39.4	18.51
14	04 14 41.57	25.713	20 49 59.9	98.88	14	06 20 24.69	26.205	25 32 25.1	16.73
15	04 17 15.96	25.749	20 59 48.6	97.36	15	06 23 01.86	26.183	25 34 00.2	14.97
16	04 19 50.56	25.783	21 09 28.2	95.83	16	06 25 38.89	26.160	25 35 24.7	13.20
17	04 22 25.36	25.817	21 18 58.6	94.29	17	06 28 15.78	26.136	25 36 38.6	11.45
18	04 25 00.36	25.850	21 28 19.7	92.73	18	06 30 52.52	26.110	25 37 42.1	09.70
19	04 27 35.56	25.883	21 37 31.3	91.15	19	06 33 29.10	26.083	25 38 35.0	07.94
20	04 30 10.95	25.914	21 46 33.5	89.58	20	06 36 05.52	26.055	25 39 17.4	06.20
21	04 32 46.53	25.944	21 55 26.2	87.98	21	06 38 41.76	26.026	25 39 49.4	04.47
22	04 35 22.28	25.974	22 04 09.2	86.36	22	06 41 17.83	25.995	25 40 11.0	02.73
23	04 37 58.22	26.003	22 12 42.5	84.74	23	06 43 53.70	25.963	25 40 22.2	01.01
24	04 40 34.32	26.031	N. 22 21 06.1	83.12	24	06 46 29.38	25.929	N. 25 40 23.1	00.71

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m	Declination.	Var. in 10m	Hour	Right Ascension.	Var. in 10m	Declination.	Var. in 10m
Wednesday 25.					Friday 27.				
00	06 46 21.5	23.720	25 40 33.2	59.71	00	08 45 10.54	22.220	22 30 54.5	71.27
01	06 47 01.85	23.73	25 40 13.7	62.43	01	08 47 29.53	22.11	22 29 43.7	72.43
02	06 51 47.11	23.851	25 39 54.0	64.13	02	08 49 48.72	22.11	22 28 35.6	73.59
03	06 54 15.15	23.822	25 39 24.1	65.83	03	08 52 07.10	22.022	22 27 26.6	74.73
04	06 56 45.97	23.712	25 38 44.1	67.52	04	08 54 25.26	22.977	22 26 20.0	75.84
05	06 59 24.55	23.743	25 37 53.9	69.20	05	08 56 42.91	22.926	22 25 15.5	76.95
06	07 01 58.69	23.703	25 36 53.7	70.88	06	08 59 00.16	22.843	22 24 05.5	78.05
07	07 04 32.98	23.611	25 35 43.4	72.54	07	09 01 17.00	22.773	22 22 41.0	79.13
08	07 07 06.82	23.611	25 34 23.2	74.20	08	09 03 33.43	22.704	22 21 36.9	80.20
09	07 09 40.40	23.574	25 32 53.0	75.85	09	09 05 49.45	22.636	22 20 11.5	81.26
10	07 12 13.71	23.520	25 31 13.0	77.48	10	09 08 05.06	22.568	22 18 00.8	82.30
11	07 14 46.75	23.483	25 29 23.2	79.12	11	09 10 20.26	22.499	22 16 13.9	83.33
12	07 17 19.50	23.435	25 27 23.6	80.73	12	09 12 35.05	22.432	22 14 20.8	84.35
13	07 19 51.97	23.387	25 25 14.4	82.34	13	09 14 49.44	22.365	22 12 51.7	85.35
14	07 22 24.14	23.338	25 22 55.5	83.95	14	09 17 03.45	22.298	22 10 46.6	86.34
15	07 24 56.02	23.288	25 20 27.0	85.54	15	09 19 17.01	22.229	22 08 37.5	87.32
16	07 27 27.59	23.236	25 17 49.0	87.13	16	09 21 30.18	22.163	22 06 24.8	88.28
17	07 29 58.85	23.183	25 15 01.5	88.69	17	09 23 42.96	22.097	22 04 10.3	89.23
18	07 32 29.79	23.130	25 12 04.7	90.24	18	09 25 55.34	22.029	22 01 52.1	90.17
19	07 35 00.41	23.077	25 08 58.6	91.79	19	09 28 07.31	21.963	21 59 23.3	91.09
20	07 37 30.71	23.024	25 05 43.2	93.33	20	09 30 18.89	21.898	21 56 45.2	92.01
21	07 40 00.68	22.967	25 02 18.7	94.85	21	09 32 30.08	21.832	21 54 11.2	92.91
22	07 42 30.31	22.910	24 58 45.0	96.37	22	09 34 40.87	21.765	21 51 11.1	93.78
23	07 44 59.60	22.853	24 55 02.3	97.88	23	09 36 51.26	21.700	21 48 24.1	94.66
Thursday 26.					Saturday 28.				
00	07 47 28.54	22.795	24 51 10.6	99.36	00	09 39 01.27	21.635	21 45 11.2	95.53
01	07 49 57.14	22.737	24 47 10.0	100.83	01	09 41 10.89	21.571	21 42 22.5	96.38
02	07 52 25.38	22.677	24 43 00.6	102.30	02	09 43 20.12	21.507	21 39 37.7	97.21
03	07 54 53.26	22.617	24 38 42.4	103.75	03	09 45 28.97	21.443	21 36 46.7	98.03
04	07 57 20.78	22.556	24 34 15.6	105.19	04	09 47 37.44	21.380	21 33 59.4	98.84
05	07 59 47.95	22.495	24 29 40.1	106.62	05	09 49 45.53	21.317	21 31 15.2	99.64
06	08 02 14.72	22.433	24 24 56.2	108.03	06	09 51 53.24	21.253	21 28 24.7	100.42
07	08 04 41.11	22.371	24 20 03.8	109.43	07	09 54 00.57	21.192	21 25 28.0	101.19
08	08 07 07.17	22.308	24 15 03.0	110.83	08	09 56 07.54	21.131	21 22 35.4	101.96
09	08 09 32.83	22.245	24 09 53.9	112.21	09	09 58 14.14	21.069	21 19 37.4	102.71
10	08 11 58.11	22.181	24 04 36.5	113.58	10	10 00 20.37	21.008	21 16 43.0	103.45
11	08 14 23.00	22.116	23 59 11.0	114.92	11	10 02 26.23	20.948	21 13 47.4	104.18
12	08 16 47.50	22.052	23 53 37.5	116.25	12	10 04 31.74	20.888	21 10 50.2	104.89
13	08 19 11.62	21.987	23 47 57.0	117.55	13	10 06 36.89	20.828	21 07 51.7	105.59
14	08 21 35.34	21.922	23 42 06.5	118.80	14	10 08 41.68	20.767	21 04 51.7	106.28
15	08 23 58.66	21.854	23 36 09.3	120.09	15	10 10 46.13	20.707	21 01 50.2	106.96
16	08 26 21.59	21.788	23 30 04.2	121.48	16	10 12 50.22	20.647	20 58 47.2	107.63
17	08 28 44.12	21.722	23 23 51.5	122.74	17	10 14 53.97	20.586	20 55 42.7	108.28
18	08 31 06.25	21.654	23 17 31.3	124.00	18	10 16 57.37	20.526	20 52 37.2	108.90
19	08 33 27.97	21.588	23 11 03.5	125.25	19	10 19 00.44	20.465	20 49 30.7	109.57
20	08 35 49.37	21.521	23 04 28.5	126.48	20	10 21 03.17	20.405	20 46 23.2	110.19
21	08 38 10.22	21.453	22 57 45.7	127.70	21	10 23 05.57	20.344	20 43 14.7	110.80
22	08 40 30.73	21.385	22 50 55.9	128.90	22	10 25 07.63	20.283	20 40 05.2	111.40
23	08 42 50.84	21.318	22 43 58.9	130.09	23	10 27 09.37	20.223	20 36 54.7	111.99
24	08 45 10.54	21.249	22 36 54.8	131.27	24	10 29 10.79	20.162	20 33 43.2	112.58

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
Sunday 29.					Monday 30.				
	h m s	s	° ' " "			h m s	s	° ' " "	
00	10 29 10.79	20.210	N. 15 04 10.5	112.58	00	11 16 17.32	19.108	N. 10 19 49.6	123.43
01	10 31 11.89	20.157	14 52 53.3	113.14	01	11 18 11.86	19.071	10 07 28.0	123.77
02	10 33 12.67	20.104	14 41 32.8	113.70	02	11 20 06.17	19.033	9 55 04.4	124.09
03	10 35 13.14	20.053	14 30 08.9	114.25	03	11 22 00.26	18.997	9 42 38.9	124.41
04	10 37 13.30	20.001	14 18 41.8	114.78	04	11 23 54.13	18.961	9 30 11.5	124.72
05	10 39 13.15	19.950	14 07 11.5	115.31	05	11 25 47.79	18.926	9 17 42.3	125.01
06	10 41 12.70	19.901	13 55 38.1	115.83	06	11 27 41.24	18.891	9 05 11.4	125.30
07	10 43 11.96	19.852	13 44 01.6	116.33	07	11 29 34.48	18.857	8 52 38.7	125.58
08	10 45 10.92	19.803	13 32 22.1	116.83	08	11 31 27.52	18.823	8 40 04.4	125.86
09	10 47 09.59	19.754	13 20 39.6	117.32	09	11 33 20.35	18.791	8 27 28.4	126.13
10	10 49 07.97	19.707	13 08 54.3	117.79	10	11 35 13.01	18.760	8 14 50.9	126.38
11	10 51 06.07	19.660	12 57 06.1	118.26	11	11 37 05.48	18.728	8 02 11.9	126.62
12	10 53 03.89	19.613	12 45 15.2	118.71	12	11 38 57.75	18.698	7 49 31.5	126.85
13	10 55 01.43	19.568	12 33 21.6	119.16	13	11 40 49.85	18.668	7 36 49.7	127.08
14	10 56 58.71	19.523	12 21 25.3	119.59	14	11 42 41.76	18.638	7 24 06.5	127.31
15	10 58 55.71	19.478	12 09 26.5	120.02	15	11 44 33.51	18.610	7 11 22.0	127.53
16	11 00 52.45	19.435	11 57 25.1	120.44	16	11 46 25.08	18.582	6 58 36.2	127.73
17	11 02 48.93	19.393	11 45 21.2	120.85	17	11 48 16.49	18.555	6 45 49.2	127.93
18	11 04 45.16	19.350	11 33 14.9	121.25	18	11 50 07.74	18.528	6 33 01.1	128.11
19	11 06 41.13	19.308	11 21 06.2	121.63	19	11 51 58.83	18.502	6 20 11.9	128.29
20	11 08 36.85	19.266	11 08 55.3	122.01	20	11 53 49.76	18.477	6 07 21.6	128.47
21	11 10 32.32	19.226	10 56 42.1	122.38	21	11 55 40.55	18.453	5 54 30.3	128.63
22	11 12 27.56	19.187	10 44 26.7	122.74	22	11 57 31.19	18.428	5 41 38.1	128.78
23	11 14 22.56	19.147	10 32 09.2	123.09	23	11 59 21.69	18.405	5 28 44.9	128.93
24	11 16 17.32	19.108	N. 10 19 49.6	123.43	24	12 01 12.05	18.383	N. 5 15 50.9	129.08

PHASES OF THE MOON.

								h m
Apr. 5	○ Full Moon ..	..	..	..	..	..	..	03 38.3
„ 13	☾ Last Quarter	..	..	..	..	..	..	08 08.7
„ 20	☾ New Moon ..	..	..	..	..	..	..	05 24.8
„ 26	☾ First Quarter	..	..	..	..	..	..	21 41.7
<hr/>								
								h
Apr. 8	☾ Apogee ..	..	..	..	..	..	..	00.2
„ 20	☾ Perigee ..	..	..	..	..	..	..	19.2

AT APPARENT NOON.

Date.		THE SUN'S				Sideral Time of the Semidiameter passing the Meridian.	Equation of Time to be subtracted from Apparent Time.		Var. in hour.
		Apparent Right Ascension	Var. in hour.	Apparent Declination.	Var. in hour.				
		h m s	s	° ' "	"	m s	m s	s	
Tues.	1	02 33 42.22	9.543	N. 15 05 14.9	45.34	1 06.02	2 26.95	0.313	
Wed.	2	02 37 31.52	9.565	15 25 15.7	44.71	1 06.10	3 24.19	0.290	
Thur.	3	02 41 21.35	9.588	15 41 01.1	44.07	1 06.18	3 10.89	0.268	
Frid.	4	02 45 11.73	9.611	15 58 30.9	43.42	1 06.26	3 17.03	0.245	
Sat.	5	02 49 02.67	9.634	16 15 44.9	42.75	1 06.34	3 22.65	0.222	
Sun.	6	02 52 54.18	9.658	16 32 42.7	42.07	1 06.42	3 27.69	0.198	
Mon.	7	02 56 46.25	9.682	16 49 24.1	41.38	1 06.50	3 32.16	0.174	
Tues.	8	03 00 38.90	9.706	17 05 48.8	40.67	1 06.58	3 36.71	0.150	
Wed.	9	03 04 32.13	9.730	17 21 56.4	39.96	1 06.67	3 50.27	0.126	
Thur.	10	03 08 25.95	9.755	17 37 46.7	39.23	1 06.75	3 42.1	0.101	
Frid.	11	03 12 20.36	9.779	17 53 19.4	38.49	1 06.83	3 42.21	0.077	
Sat.	12	03 16 15.37	9.804	18 08 34.2	37.74	1 06.91	3 45.71	0.052	
Sun.	13	03 20 10.07	9.829	18 23 30.9	36.98	1 06.99	3 49.71	0.027	
Mon.	14	03 24 07.16	9.854	18 38 09.1	36.21	1 07.07	3 47.71	0.003	
Tues.	15	03 28 03.95	9.878	18 52 28.6	35.42	1 07.15	3 41.71	0.022	
Wed.	16	03 32 01.32	9.903	19 06 29.1	34.62	1 07.23	3 31.71	0.046	
Thur.	17	03 35 59.28	9.927	19 20 10.3	33.81	1 07.31	3 47.71	0.070	
Frid.	18	03 39 57.81	9.951	19 33 31.8	32.99	1 07.39	3 42.71	0.094	
Sat.	19	03 43 56.00	9.974	19 46 33.5	32.15	1 07.47	3 32.71	0.117	
Sun.	20	03 47 50.54	9.996	19 59 15.0	31.30	1 07.55	3 37.71	0.140	
Mon.	21	03 51 50.72	10.019	20 11 36.0	30.44	1 07.63	3 33.71	0.162	
Tues.	22	03 55 57.43	10.040	20 23 36.2	29.57	1 07.70	3 29.71	0.183	
Wed.	23	03 59 58.65	10.061	20 35 15.4	28.69	1 07.78	3 24.71	0.204	
Thur.	24	04 04 00.38	10.082	20 46 33.4	27.80	1 07.85	3 19.71	0.225	
Frid.	25	04 08 02.59	10.103	20 57 29.9	26.90	1 07.92	3 12.71	0.245	
Sat.	26	04 12 05.28	10.122	21 08 04.7	25.99	1 07.99	3 07.71	0.265	
Sun.	27	04 16 08.44	10.141	21 18 17.5	25.07	1 08.06	3 01.71	0.284	
Mon.	28	04 20 12.06	10.160	21 28 08.2	24.15	1 08.13	2 55.71	0.303	
Tues.	29	04 24 16.12	10.178	21 37 36.5	23.21	1 08.19	2 49.71	0.321	
Wed.	30	04 28 20.61	10.196	21 46 42.3	22.27	1 08.25	2 43.71	0.338	
Thur.	31	04 32 25.52	10.213	21 55 25.4	21.32	1 08.31	2 37.71	0.356	
Frid.	32	04 36 30.84	10.230	N. 22 03 45.6	20.36	1 08.36	2 31.71	0.372	

*Mean Time of the Semidiameter passing may be found by subtracting 0.18 from the Sideral Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be subtracted from Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*		
		h m s	° ' "	' "	m s	h m s
Tues.	1	02 33 42.69	N. 15 05 17.2	15 53.65	2 56.97	02 36 39.66
Wed.	2	02 37 32.01	15 23 17.9	15 53.42	3 04.20	02 40 36.21
Thur.	3	02 41 21.86	15 41 03.4	15 53.19	3 10.91	02 44 32.77
Frid.	4	02 45 12.26	15 58 33.3	15 52.96	3 17.06	02 48 29.32
Sat.	5	02 49 03.22	16 15 47.3	15 52.73	3 22.66	02 52 25.88
Sun.	6	02 52 54.73	16 32 45.2	15 52.50	3 27.70	02 56 22.43
Mon.	7	02 56 46.82	16 49 26.6	15 52.27	3 32.17	03 00 18.99
Tues.	8	03 00 39.48	17 05 51.2	15 52.04	3 36.06	03 04 15.54
Wed.	9	03 04 32.73	17 21 58.8	15 51.82	3 39.38	03 08 12.10
Thur.	10	03 08 26.55	17 37 49.1	15 51.60	3 42.10	03 12 08.66
Frid.	11	03 12 20.97	17 53 21.8	15 51.38	3 44.24	03 16 05.21
Sat.	12	03 16 15.98	18 08 36.6	15 51.16	3 45.78	03 20 01.77
Sun.	13	03 20 11.59	18 23 33.2	15 50.95	3 46.74	03 23 58.32
Mon.	14	03 24 07.78	18 38 11.4	15 50.74	3 47.10	03 27 54.88
Tues.	15	03 28 04.57	18 52 30.9	15 50.53	3 46.87	03 31 51.44
Wed.	16	03 32 01.94	19 06 31.3	15 50.33	3 46.05	03 35 47.99
Thur.	17	03 35 59.90	19 20 12.4	15 50.13	3 44.65	03 39 44.55
Frid.	18	03 39 58.42	19 33 33.9	15 49.94	3 42.69	03 43 41.11
Sat.	19	03 43 57.51	19 46 35.5	15 49.75	3 40.16	03 47 37.66
Sun.	20	03 47 57.14	19 59 16.9	15 49.57	3 37.08	03 51 34.22
Mon.	21	03 51 57.32	20 11 37.8	15 49.39	3 33.46	03 55 30.78
Tues.	22	03 55 58.01	20 23 37.9	15 49.21	3 29.32	03 59 27.33
Wed.	23	03 59 59.22	20 35 17.1	15 49.04	3 24.67	04 03 23.89
Thur.	24	04 04 00.94	20 46 35.0	15 48.88	3 19.51	04 07 20.45
Frid.	25	04 08 03.13	20 57 31.4	15 48.72	3 13.87	04 11 17.01
Sat.	26	04 12 05.81	21 08 06.0	15 48.56	3 07.75	04 15 13.56
Sun.	27	04 16 08.95	21 18 18.8	15 48.40	3 01.17	04 19 10.12
Mon.	28	04 20 12.55	21 28 09.4	15 48.25	2 54.13	04 23 06.68
Tues.	29	04 24 16.59	21 37 37.6	15 48.11	2 46.65	04 27 03.24
Wed.	30	04 28 21.06	21 46 43.3	15 47.96	2 38.74	04 30 59.79
Thur.	31	04 32 25.95	21 55 26.3	15 47.82	2 30.40	04 34 56.35
Frid.	32	04 36 31.24	N. 22 03 46.4	15 47.68	2 21.67	04 38 52.91

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius - Vector of the Earth 1:	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
	12h.	12h.	12h.		oh.	12h.	oh.	12h.
	° ' "	"		h m s	' "	' "	' "	' "
1	40 51 12.4	N. 0.17	0.0034147	09 23 46.01	14 55.38	14 52.36	54 46.16	54 35.07
2	41 49 22.8	0.11	0.0035213	09 19 50.10	14 49.77	14 47.59	54 25.56	54 17.56
3	42 47 31.3	N. 0.02	0.0036273	09 15 54.19	14 45.81	14 44.40	54 11.01	54 05.86
4	43 45 38.1	S. 0.09	0.0037327	09 11 58.28	14 43.37	14 42.70	54 02.07	53 59.60
5	44 43 43.1	0.21	0.0038375	09 08 02.37	14 42.38	14 42.42	53 58.44	53 58.60
6	45 41 46.5	0.33	0.0039417	09 04 06.46	14 42.83	14 43.61	54 00.09	54 02.95
7	46 39 48.3	0.45	0.0040451	09 00 10.55	14 44.77	14 46.34	54 07.22	54 12.98
8	47 37 48.7	0.57	0.0041479	08 56 14.64	14 48.34	14 50.77	54 20.29	54 29.22
9	48 35 47.5	0.69	0.0042498	08 52 18.73	14 53.66	14 57.04	54 39.85	54 52.25
10	49 33 45.0	0.79	0.0043507	08 48 22.82	15 00.92	15 05.30	55 06.47	55 22.56
11	50 31 41.2	0.87	0.0044507	08 44 26.91	15 10.19	15 15.58	55 40.51	56 00.31
12	51 29 36.1	0.93	0.0045495	08 40 31.00	15 21.46	15 27.79	56 21.89	56 45.13
13	52 27 29.7	0.95	0.0046470	08 36 35.09	15 34.53	15 41.59	57 09.84	57 35.78
14	53 25 22.2	0.94	0.0047430	08 32 39.18	15 48.90	15 56.34	58 02.60	58 29.92
15	54 23 13.4	0.90	0.0048374	08 28 43.27	16 03.79	16 11.07	58 57.23	59 23.97
16	55 21 03.5	0.83	0.0049300	08 24 47.36	16 18.03	16 24.47	59 49.51	60 13.17
17	56 18 52.4	0.73	0.0050207	08 20 51.45	16 30.22	16 35.08	60 34.26	60 52.10
18	57 16 40.0	0.61	0.0051092	08 16 55.54	16 38.89	16 41.50	61 06.08	61 15.68
19	58 14 26.3	0.47	0.0051957	08 12 59.63	16 42.82	16 42.78	61 20.51	61 20.36
20	59 12 11.3	0.32	0.0052799	08 09 03.72	16 41.38	16 38.66	61 15.22	61 05.24
21	60 09 54.8	0.18	0.0053619	08 05 07.81	16 34.71	16 29.68	60 50.75	60 32.26
22	61 07 36.9	S. 0.04	0.0054417	08 01 11.89	16 23.71	16 17.00	60 10.36	59 45.74
23	62 05 17.4	N. 0.08	0.0055194	07 57 15.98	16 09.74	16 02.13	59 19.10	58 51.16
24	63 02 56.5	0.18	0.0055952	07 53 20.07	15 54.35	15 46.56	58 22.59	57 54.00
25	64 00 34.1	0.25	0.0056691	07 49 24.16	15 38.91	15 31.54	57 25.94	56 58.86
26	64 58 10.2	0.28	0.0057413	07 45 28.25	15 24.53	15 17.98	56 33.15	56 09.09
27	65 55 44.8	0.28	0.0058118	07 41 32.34	15 11.94	15 06.46	55 46.93	55 26.80
28	66 53 18.0	0.25	0.0058807	07 37 36.43	15 01.55	14 57.25	55 08.82	54 53.01
29	67 50 49.8	0.20	0.0059482	07 33 40.52	14 53.54	14 50.42	54 39.40	54 27.94
30	68 48 20.3	0.12	0.0060143	07 29 44.60	14 47.87	14 45.87	54 18.57	54 11.23
31	69 45 49.6	N. 0.03	0.0060790	07 25 48.69	14 44.39	14 43.41	54 05.81	54 02.22
32	70 43 17.7	S. 0.07	0.0061424	07 21 52.78	14 42.90	14 42.83	54 00.34	54 00.07

MEAN TIME.

Day of the Month	THE MOON'S							
	Longitude.		Latitude.		Age.	Meridian Passage.		
	oh.	12h.	oh.	12h.		oh.	Upper.	Lower.
	° ' "	° ' "	° ' "	° ' "	d	h m	h m	
1	178 10 31.0	184 14 37.2	N. 4 56 51.6	N. 4 44 50.8	10.77	22 03.0	09 42.6	
2	190 16 33.6	196 16 37.1	4 29 43.3	4 11 40.8	11.77	22 43.4	10 23.2	
3	202 15 03.8	208 12 09.2	3 50 56.8	3 27 45.4	12.77	23 24.2	11 03.7	
4	214 08 08.3	220 03 15.7	3 02 21.9	2 35 02.3	13.77	* *	11 45.0	
5	225 57 46.5	231 51 55.9	2 06 03.8	1 35 44.1	14.77	00 06.2	12 27.8	
6	237 46 00.0	243 40 15.9	N. 1 04 21.3	N. 0 32 14.3	15.77	00 50.1	13 12.9	
7	249 35 01.8	255 30 37.4	S. 0 00 17.9	S. 0 32 56.0	16.77	01 36.4	14 00.4	
8	261 27 24.0	267 25 44.2	1 05 20.3	1 37 11.3	17.77	02 25.0	14 50.2	
9	273 26 02.7	279 28 45.7	2 08 09.1	2 37 54.1	18.77	03 15.7	15 41.6	
10	285 34 20.4	291 43 15.7	3 06 06.2	3 32 25.5	19.77	04 07.6	16 33.9	
11	297 56 00.7	304 13 05.0	3 56 31.7	4 18 05.0	20.77	04 59.9	17 25.8	
12	310 34 57.9	317 02 07.1	4 36 45.0	4 52 11.6	21.77	05 51.6	18 17.0	
13	323 34 58.5	330 13 54.2	5 04 05.5	5 12 07.8	22.77	06 42.2	19 07.2	
14	336 59 12.3	343 51 04.7	5 16 00.8	5 15 29.2	23.77	07 31.9	19 56.6	
15	350 49 36.0	357 54 42.5	5 10 20.2	5 00 25.0	24.77	08 21.2	20 46.0	
16	5 06 10.9	12 23 37.7	4 45 40.0	4 26 07.1	25.77	09 11.0	21 36.4	
17	19 46 28.3	27 13 58.1	4 01 56.0	3 33 23.6	26.77	10 02.3	22 29.0	
18	34 45 12.7	42 19 09.4	3 00 55.3	2 25 04.4	27.77	10 56.5	23 24.8	
19	49 54 39.9	57 30 31.8	1 46 31.0	S. 1 06 01.3	28.77	11 54.1	* *	
20	65 05 32.5	72 38 31.2	S. 0 24 24.9	N. 0 17 27.1	0.45	12 55.3	00 24.3	
21	80 08 21.9	87 34 05.6	N. 0 58 44.2	1 38 30.1	1.45	13 56.8	01 26.9	
22	94 54 52.0	102 10 00.6	2 16 28.9	2 51 36.8	2.45	15 02.2	02 30.7	
23	109 19 01.1	116 21 33.6	3 23 32.7	3 51 53.1	3.45	16 02.8	03 33.0	
24	123 17 28.0	130 06 43.1	4 16 21.2	4 36 46.2	4.45	16 59.1	04 31.6	
25	136 49 25.6	143 25 48.9	4 53 02.5	5 05 08.8	5.45	17 50.5	05 25.4	
26	149 56 11.7	156 20 57.2	5 13 07.4	5 17 03.6	6.45	18 37.3	06 14.4	
27	162 40 31.5	168 55 23.0	5 17 04.6	5 13 19.5	7.45	19 21.1	06 59.6	
28	175 06 01.2	181 12 56.4	5 05 58.4	4 55 12.4	8.45	20 02.4	07 42.0	
29	187 16 38.6	193 17 37.7	4 41 15.6	4 24 14.5	9.45	20 42.9	08 22.7	
30	199 16 22.1	205 15 19.5	4 04 28.4	3 42 09.2	10.45	21 23.3	09 03.1	
31	211 08 56.0	217 03 36.4	3 17 31.3	2 50 50.1	11.45	22 04.7	09 43.9	
32	222 57 43.9	228 51 40.2	N. 2 22 21.4	N. 1 52 22.1	12.45	22 48.0	10 26.1	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination	Var. in 10m.
Tuesday 1.					Thursday 3.				
	h m s		c r "			h m s		c r "	
00	12 01 12.05	18.313	N. 5 15 50.0	129.08	00	13 28 02.90	18.043	S. 5 05 32.4	127.02
01	12 03 02.28	18.366	5 02 56.0	129.21	01	13 29 51.18	18.050	5 18 13.9	126.80
02	12 04 52.37	18.418	4 50 00.4	129.33	02	13 31 39.50	18.058	5 30 54.0	126.57
03	12 06 42.34	18.468	4 37 04.1	129.45	03	13 33 27.88	18.068	5 43 32.7	126.33
04	12 08 32.10	18.518	4 24 07.0	129.56	04	13 35 16.31	18.078	5 56 09.9	126.08
05	12 10 21.02	18.569	4 11 09.4	129.66	05	13 37 04.81	18.088	6 08 45.7	125.84
06	12 12 11.54	18.620	3 58 11.1	129.76	06	13 38 53.36	18.098	6 21 20.0	125.58
07	12 14 01.04	18.672	3 45 12.3	129.84	07	13 40 41.98	18.108	6 33 52.7	125.32
08	12 15 50.44	18.725	3 32 13.0	129.92	08	13 42 30.66	18.120	6 46 23.8	125.04
09	12 17 39.74	18.778	3 19 13.3	129.99	09	13 44 19.42	18.133	6 58 53.2	124.77
10	12 19 28.93	18.832	3 06 13.1	130.06	10	13 46 08.25	18.144	7 11 21.0	124.48
11	12 21 18.04	18.887	2 53 12.6	130.11	11	13 47 57.15	18.158	7 23 47.0	124.18
12	12 23 07.05	18.942	2 40 11.8	130.16	12	13 49 46.14	18.173	7 36 11.2	123.88
13	12 24 55.98	18.998	2 27 10.7	130.20	13	13 51 35.22	18.187	7 48 33.6	123.58
14	12 26 44.82	19.053	2 14 09.4	130.23	14	13 53 24.38	18.201	8 00 54.1	123.26
15	12 28 33.58	19.109	2 01 08.0	130.25	15	13 55 13.63	18.217	8 13 12.7	122.94
16	12 30 22.27	19.166	1 48 06.4	130.28	16	13 57 02.98	18.233	8 25 29.4	122.61
17	12 32 10.89	19.223	1 35 04.7	130.28	17	13 58 52.42	18.248	8 37 44.0	122.27
18	12 33 59.44	19.281	1 22 03.0	130.29	18	14 00 41.96	18.266	8 49 56.6	121.93
19	12 35 47.93	19.339	1 09 01.2	130.29	19	14 02 31.61	18.283	9 02 07.1	121.57
20	12 37 36.35	19.398	0 55 59.5	130.28	20	14 04 21.36	18.301	9 14 15.4	121.21
21	12 39 24.77	19.458	0 42 57.9	130.25	21	14 06 11.22	18.319	9 26 21.6	120.84
22	12 41 13.04	19.518	0 29 56.5	130.23	22	14 08 01.10	18.338	9 38 25.5	120.47
23	12 43 01.31	19.579	0 16 55.2	130.20	23	14 09 51.27	18.358	9 50 27.2	120.09
Wednesday 2.					Friday 4.				
	h m s		c r "			h m s		c r "	
00	12 44 49.53	19.640	0 04 54.1	130.16	00	14 11 41.48	18.378	S. 10 02 26.6	119.70
01	12 46 37.71	19.702	0 01 52.7	130.11	01	14 13 31.81	18.398	10 14 23.6	119.29
02	12 48 25.86	19.765	0 22 51.2	130.06	02	14 15 22.26	18.419	10 26 18.1	118.89
03	12 50 13.97	19.829	0 35 49.4	130.00	03	14 17 12.84	18.440	10 38 10.3	118.48
04	12 52 02.05	19.894	0 48 47.2	129.93	04	14 19 03.54	18.462	10 49 59.9	118.06
05	12 53 50.10	19.960	1 01 45.5	129.85	05	14 20 54.38	18.484	11 01 47.0	117.63
06	12 55 38.13	20.027	1 14 05.4	129.77	06	14 22 45.35	18.508	11 13 31.5	117.20
07	12 57 26.14	20.095	1 27 03.7	129.67	07	14 24 36.47	18.531	11 25 13.4	116.76
08	12 59 14.14	20.164	1 40 01.4	129.57	08	14 26 27.72	18.553	11 36 52.6	116.31
09	13 01 02.12	20.234	1 52 58.5	129.47	09	14 28 19.11	18.578	11 48 29.1	115.85
10	13 02 50.10	20.305	2 05 55.0	129.36	10	14 30 10.66	18.603	12 00 02.8	115.38
11	13 04 38.07	20.377	2 18 50.8	129.23	11	14 32 02.35	18.628	12 11 33.7	114.91
12	13 06 26.04	20.450	2 31 45.8	129.10	12	14 33 54.19	18.653	12 23 01.7	114.43
13	13 08 14.01	20.524	2 44 40.0	128.97	13	14 35 46.19	18.679	12 34 26.8	113.94
14	13 10 01.99	20.599	2 57 33.4	128.83	14	14 37 38.34	18.705	12 45 49.0	113.45
15	13 11 49.98	20.675	3 10 26.0	128.68	15	14 39 30.65	18.733	12 57 08.2	112.94
16	13 13 37.99	20.752	3 23 17.6	128.52	16	14 41 23.13	18.760	13 08 24.3	112.41
17	13 15 26.01	20.830	3 36 08.2	128.36	17	14 43 15.77	18.788	13 19 37.4	111.9
18	13 17 14.05	20.909	3 48 57.9	128.19	18	14 45 08.58	18.815	13 30 47.3	111.3
19	13 19 02.11	20.989	4 01 46.5	128.01	19	14 47 01.55	18.843	13 41 54.0	110.8
20	13 20 50.20	21.070	4 14 34.0	127.83	20	14 48 54.70	18.873	13 52 57.5	110.31
21	13 22 38.32	21.152	4 27 20.4	127.64	21	14 50 48.02	18.902	14 03 57.7	109.76
22	13 24 26.47	21.235	4 40 05.7	127.44	22	14 52 41.52	18.931	14 14 54.6	109.20
23	13 26 14.67	21.319	4 52 49.7	127.23	23	14 54 35.19	18.961	14 25 48.1	108.63
24	13 28 02.90	21.404	5 05 32.4	127.02	24	14 56 29.05	18.992	S. 14 36 38.2	108.06

MAY, 1928.

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MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour.	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Saturday 5.					Monday 7.				
	h m s		° ' "			h m s		° ' "	
00	14 56 29.05	18.992	S. 14 36 38.2	108.06	00	16 31 39.72	20.733	S. 21 54 07.7	71.17
01	14 58 23.09	19.023	14 47 24.8	107.48	01	16 33 44.23	20.771	22 01 11.8	70.21
02	15 00 17.32	19.053	14 58 07.9	106.89	02	16 35 48.97	20.809	22 08 10.2	69.24
03	15 02 11.73	19.084	15 08 47.5	106.29	03	16 37 53.94	20.848	22 15 02.7	68.26
04	15 04 06.33	19.116	15 19 23.4	105.68	04	16 39 59.14	20.885	22 21 49.3	67.28
05	15 06 01.12	19.148	15 29 55.7	105.07	05	16 42 04.56	20.923	22 28 30.0	66.28
06	15 07 56.11	19.181	15 40 24.2	104.45	06	16 44 10.22	20.962	22 35 04.7	65.28
07	15 09 51.29	19.213	15 50 49.1	103.83	07	16 46 16.10	20.999	22 41 33.4	64.28
08	15 11 46.67	19.246	16 01 10.1	103.18	08	16 48 22.21	21.037	22 47 56.0	63.26
09	15 13 42.24	19.279	16 11 27.3	102.54	09	16 50 28.54	21.074	22 54 12.5	62.24
10	15 15 38.02	19.313	16 21 40.6	101.88	10	16 52 35.10	21.112	23 00 22.9	61.22
11	15 17 34.00	19.348	16 31 49.9	101.23	11	16 54 41.88	21.148	23 06 27.1	60.18
12	15 19 30.19	19.382	16 41 55.3	100.56	12	16 56 48.88	21.185	23 12 25.0	59.13
13	15 21 26.58	19.416	16 51 56.6	99.88	13	16 58 56.10	21.223	23 18 16.7	58.08
14	15 23 23.18	19.451	17 01 53.9	99.20	14	17 01 03.55	21.259	23 24 02.0	57.03
15	15 25 19.99	19.487	17 11 47.0	98.50	15	17 03 11.21	21.294	23 29 41.0	55.96
16	15 27 17.02	19.522	17 21 35.9	97.80	16	17 05 19.08	21.331	23 35 13.5	54.88
17	15 29 14.25	19.557	17 31 20.6	97.10	17	17 07 27.18	21.367	23 40 39.6	53.82
18	15 31 11.70	19.593	17 41 01.1	96.38	18	17 09 35.48	21.402	23 45 59.3	52.73
19	15 33 09.36	19.628	17 50 37.2	95.65	19	17 11 44.00	21.437	23 51 12.4	51.63
20	15 35 07.24	19.664	18 00 08.9	94.92	20	17 13 52.72	21.471	23 56 18.9	50.53
21	15 37 05.33	19.701	18 09 36.2	94.18	21	17 16 01.65	21.506	24 01 18.8	49.43
22	15 39 03.65	19.738	18 18 59.1	93.43	22	17 18 10.79	21.541	24 06 12.0	48.32
23	15 41 02.19	19.775	S. 18 28 17.4	92.68	23	17 20 20.14	21.574	S. 24 10 58.6	47.20
Sunday 6.					Tuesday 8.				
	h m s		° ' "			h m s		° ' "	
00	15 43 00.95	19.812	S. 18 37 31.2	91.92	00	17 22 29.68	21.607	S. 24 15 38.4	46.08
01	15 44 59.93	19.849	18 46 40.4	91.14	01	17 24 39.42	21.640	24 20 11.5	44.94
02	15 46 59.14	19.887	18 55 44.9	90.36	02	17 26 49.36	21.673	24 24 37.7	43.81
03	15 48 58.57	19.924	19 04 44.7	89.57	03	17 28 59.50	21.706	24 28 57.2	42.67
04	15 50 58.23	19.962	19 13 39.7	88.77	04	17 31 09.83	21.738	24 33 09.7	41.51
05	15 52 58.11	19.999	19 22 29.9	87.97	05	17 33 20.36	21.770	24 37 15.3	40.36
06	15 54 58.22	20.038	19 31 15.3	87.16	06	17 35 31.07	21.800	24 41 14.0	39.20
07	15 56 58.56	20.075	19 39 55.8	86.33	07	17 37 41.96	21.831	24 45 05.7	38.03
08	15 58 59.12	20.113	19 48 31.3	85.50	08	17 39 53.04	21.862	24 48 50.3	36.85
09	16 00 59.92	20.153	19 57 01.8	84.67	09	17 42 04.30	21.892	24 52 27.9	35.68
10	16 03 00.95	20.191	20 05 27.3	83.83	10	17 44 15.74	21.921	24 55 58.5	34.50
11	16 05 02.21	20.229	20 13 47.7	82.97	11	17 46 27.35	21.950	24 59 21.9	33.30
12	16 07 03.70	20.268	20 22 02.9	82.11	12	17 48 39.14	21.978	25 02 38.1	32.11
13	16 09 05.42	20.307	20 30 13.0	81.24	13	17 50 51.09	22.007	25 05 47.2	30.91
14	16 11 07.38	20.346	20 38 17.8	80.37	14	17 53 03.22	22.034	25 08 49.0	29.70
15	16 13 09.57	20.384	20 46 17.4	79.48	15	17 55 15.50	22.061	25 11 43.6	28.49
16	16 15 11.99	20.423	20 54 11.6	79.58	16	17 57 27.95	22.088	25 14 30.9	27.28
17	16 17 14.64	20.462	21 02 00.4	77.68	17	17 59 40.55	22.113	25 17 10.9	26.06
18	16 19 17.53	20.501	21 09 43.8	76.78	18	18 01 53.31	22.139	25 19 43.6	24.83
19	16 21 20.65	20.539	21 17 21.7	75.86	19	18 04 06.22	22.164	25 22 08.9	23.60
20	16 23 24.00	20.578	21 24 54.1	74.94	20	18 06 19.28	22.188	25 24 26.8	22.37
21	16 25 27.58	20.616	21 32 21.0	74.01	21	18 08 32.48	22.213	25 26 37.3	21.13
22	16 27 31.39	20.655	21 39 42.2	73.07	22	18 10 45.83	22.236	25 28 40.3	19.88
23	16 29 35.44	20.694	21 46 57.8	72.13	23	18 12 59.31	22.258	25 30 35.9	18.63
24	16 31 39.72	20.733	S. 21 54 07.7	71.17	24	18 15 12.93	22.281	S. 25 32 23.9	17.38

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	
Wednesday 9.					Friday 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	
00	18 15 12.93	22.281	S. 25 32 23.9	17.38	00	20 03 33.02	22.623	S. 24 26 41.2	
01	18 17 26.68	22.303	25 34 04.4	16.13	01	20 05 48.73	22.615	24 22 06.5	
02	18 19 40.56	22.323	25 35 37.4	14.87	02	20 08 04.40	22.608	24 17 23.9	
03	18 21 54.56	22.344	25 37 02.8	13.60	03	20 10 20.02	22.599	24 12 33.6	
04	18 24 08.69	22.364	25 38 20.6	12.33	04	20 12 35.59	22.591	24 07 35.5	
05	18 26 22.93	22.383	25 39 30.8	11.07	05	20 14 51.11	22.583	24 02 29.7	
06	18 28 37.28	22.401	25 40 33.4	09.79	06	20 17 06.58	22.573	23 57 16.1	
07	18 30 51.74	22.420	25 41 28.3	08.52	07	20 19 21.98	22.562	23 51 54.8	
08	18 33 06.32	22.438	25 42 15.6	07.23	08	20 21 37.32	22.552	23 46 25.8	
09	18 35 20.99	22.453	25 42 55.1	05.94	09	20 23 52.60	22.541	23 40 49.1	
10	18 37 35.76	22.469	25 43 26.9	04.66	10	20 26 07.81	22.530	23 35 04.8	
11	18 39 50.62	22.485	25 43 51.0	03.38	11	20 28 22.96	22.518	23 29 12.8	
12	18 42 05.58	22.501	25 44 07.4	02.08	12	20 30 38.03	22.506	23 23 13.2	
13	18 44 20.63	22.515	25 44 16.0	00.78	13	20 32 53.03	22.494	23 17 06.0	
14	18 46 35.76	22.528	25 44 16.8	00.52	14	20 35 07.96	22.481	23 10 51.2	
15	18 48 50.97	22.541	25 44 09.8	01.82	15	20 37 22.80	22.468	23 04 28.9	
16	18 51 06.25	22.553	25 43 55.0	03.12	16	20 39 37.57	22.455	22 57 59.0	
17	18 53 21.61	22.565	25 43 32.4	04.42	17	20 41 52.26	22.441	22 51 21.6	
18	18 55 37.03	22.576	25 43 02.0	05.73	18	20 44 06.86	22.427	22 44 36.7	
19	18 57 52.52	22.587	25 42 23.7	07.03	19	20 46 21.38	22.413	22 37 44.4	
20	19 00 08.07	22.597	25 41 37.6	08.34	20	20 48 35.81	22.398	22 30 44.6	
21	19 02 23.68	22.606	25 40 43.6	09.65	21	20 50 50.16	22.383	22 23 37.4	
22	19 04 39.34	22.614	25 39 41.8	10.97	22	20 53 04.41	22.368	22 16 22.8	
23	19 06 55.05	22.623	S. 25 38 32.0	12.28	23	20 55 18.58	22.353	S. 22 09 00.9	
Thursday 10.					Saturday 12.				
00	19 09 10.81	22.630	S. 25 37 14.4	13.59	00	20 57 32.65	22.338	S. 22 01 31.6	
01	19 11 26.61	22.637	25 35 48.9	14.91	01	20 59 46.63	22.322	21 53 55.0	
02	19 13 42.45	22.643	25 34 15.5	16.23	02	21 02 00.51	22.306	21 46 11.2	
03	19 15 58.32	22.648	25 32 34.2	17.55	03	21 04 14.30	22.289	21 38 20.1	
04	19 18 14.22	22.653	25 30 44.9	18.87	04	21 06 27.98	22.273	21 30 21.9	
05	19 20 30.15	22.657	25 28 47.8	20.18	05	21 08 41.57	22.258	21 22 16.4	
06	19 22 46.10	22.660	25 26 42.7	21.50	06	21 10 55.07	22.241	21 14 03.9	
07	19 25 02.07	22.663	25 24 29.8	22.82	07	21 13 08.46	22.223	21 05 44.2	
08	19 27 18.06	22.666	25 22 08.9	24.13	08	21 15 21.75	22.207	20 57 17.4	
09	19 29 34.06	22.667	25 19 40.2	25.45	09	21 17 34.94	22.190	20 48 43.5	
10	19 31 50.06	22.668	25 17 03.5	26.78	10	21 19 48.03	22.173	20 40 02.7	
11	19 34 06.07	22.668	25 14 18.9	28.09	11	21 22 01.02	22.156	20 31 14.9	
12	19 36 22.08	22.668	25 11 26.4	29.41	12	21 24 13.90	22.138	20 22 20.1	
13	19 38 38.09	22.668	25 08 26.0	30.73	13	21 26 26.68	22.122	20 13 18.4	
14	19 40 54.09	22.666	25 05 17.7	32.05	14	21 28 39.36	22.105	20 04 09.9	
15	19 43 10.08	22.664	25 02 01.4	33.37	15	21 30 51.94	22.088	19 54 54.5	
16	19 45 26.06	22.662	24 58 37.3	34.68	16	21 33 04.41	22.070	19 45 32.4	
17	19 47 42.02	22.658	24 55 05.3	35.99	17	21 35 16.78	22.053	19 36 03.4	
18	19 49 57.96	22.655	24 51 25.4	37.30	18	21 37 29.04	22.035	19 26 27.8	
19	19 52 13.88	22.651	24 47 37.7	38.61	19	21 39 41.20	22.018	19 16 45.5	
20	19 54 29.77	22.647	24 43 42.1	39.93	20	21 41 53.26	22.002	19 06 56.5	
21	19 56 45.64	22.642	24 39 38.6	41.23	21	21 44 05.22	21.984	18 57 00.9	
22	19 59 01.47	22.635	24 35 27.3	42.53	22	21 46 17.07	21.968	18 46 58.8	
23	20 01 17.26	22.629	24 31 08.2	43.84	23	21 48 28.83	21.951	18 36 50.2	
24	20 03 33.02	22.623	S. 24 26 41.2	45.14	24	21 50 40.48	21.933	S. 18 26 35.1	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
Sunday 13.					Tuesday 15.				
00	21 50 40.48	21.933	S. 18 26 35.1	103.05	00	23 34 30.87	21.485	S. 8 23 19.2	144.77
01	21 52 52.03	21.917	18 16 13.6	104.13	01	23 36 39.79	21.488	8 08 48.7	145.39
02	21 55 03.48	21.901	18 05 45.6	105.19	02	23 38 48.72	21.490	7 54 14.5	146.01
03	21 57 14.84	21.884	17 55 11.3	106.24	03	23 40 57.67	21.493	7 39 36.6	146.61
04	21 59 26.09	21.863	17 44 30.7	107.28	04	23 43 06.64	21.498	7 24 55.2	147.19
05	22 01 37.25	21.852	17 33 43.9	108.33	05	23 45 15.61	21.503	7 10 10.3	147.78
06	22 03 48.31	21.836	17 22 50.8	109.37	06	23 47 24.68	21.509	6 55 21.9	148.34
07	22 05 59.28	21.820	17 11 51.5	110.39	07	23 49 33.75	21.514	6 40 30.2	148.88
08	22 08 10.15	21.804	17 00 46.1	111.40	08	23 51 42.85	21.521	6 25 35.3	149.43
09	22 10 20.93	21.790	16 49 34.7	112.41	09	23 53 52.00	21.529	6 10 37.1	149.96
10	22 12 31.63	21.775	16 38 17.2	113.42	10	23 56 01.20	21.538	5 55 35.8	150.48
11	22 14 42.23	21.759	16 26 53.7	114.41	11	23 58 10.45	21.546	5 40 31.4	150.98
12	22 16 52.74	21.745	16 15 24.3	115.39	12	00 00 19.75	21.555	5 25 24.0	151.47
13	22 19 03.17	21.731	16 03 49.0	116.37	13	00 02 29.11	21.566	5 10 13.8	151.95
14	22 21 13.51	21.717	15 52 07.9	117.33	14	00 04 38.54	21.577	4 55 00.8	152.40
15	22 23 23.77	21.703	15 40 21.0	118.30	15	00 06 48.03	21.588	4 39 45.0	152.86
16	22 25 33.95	21.690	15 28 28.3	119.25	16	00 08 57.59	21.600	4 24 26.5	153.29
17	22 27 44.05	21.677	15 16 30.0	120.19	17	00 11 07.23	21.613	4 09 05.5	153.72
18	22 29 54.07	21.663	15 04 26.0	121.13	18	00 13 16.95	21.627	3 53 41.9	154.13
19	22 32 04.01	21.651	14 52 16.4	122.06	19	00 15 26.75	21.641	3 38 16.0	154.52
20	22 34 13.88	21.639	14 40 01.3	122.98	20	00 17 36.64	21.656	3 22 47.7	154.90
21	22 36 23.68	21.628	14 27 40.7	123.89	21	00 19 46.62	21.673	3 07 17.2	155.27
22	22 38 33.42	21.617	14 15 14.6	124.79	22	00 21 56.71	21.689	2 51 44.5	155.63
23	22 40 43.08	21.605	S. 14 02 43.2	125.68	23	00 24 06.89	21.706	S. 2 36 09.7	155.96
Monday 14.					Wednesday 16.				
00	22 42 52.68	21.595	S. 13 50 06.5	126.56	00	00 26 17.18	21.724	S. 2 20 33.0	156.28
01	22 45 02.22	21.585	13 37 24.5	127.43	01	00 28 27.58	21.743	2 04 54.3	156.59
02	22 47 11.70	21.575	13 24 37.3	128.29	02	00 30 38.09	21.762	1 49 13.9	156.88
03	22 49 21.12	21.566	13 11 45.0	129.15	03	00 32 48.72	21.783	1 33 31.7	157.17
04	22 51 30.49	21.558	12 58 47.5	130.00	04	00 34 59.48	21.803	1 17 47.8	157.43
05	22 53 39.81	21.548	12 45 45.0	130.83	05	00 37 10.36	21.825	1 02 02.5	157.68
06	22 55 49.07	21.540	12 32 37.5	131.66	06	00 39 21.38	21.848	0 46 15.6	157.92
07	22 57 58.29	21.533	12 19 25.1	132.47	07	00 41 32.3	21.870	0 30 27.4	158.13
08	23 00 07.47	21.527	12 06 07.9	133.28	08	00 43 43.82	21.894	S. 0 14 38.0	158.33
09	23 02 16.61	21.519	11 52 45.8	134.08	09	00 45 55.26	21.919	N. 0 01 12.6	158.53
10	23 04 25.70	21.513	11 39 18.9	134.87	10	00 48 06.85	21.944	0 17 04.3	158.70
11	23 06 34.77	21.508	11 25 47.4	135.64	11	00 50 18.59	21.970	0 32 57.0	158.86
12	23 08 43.80	21.503	11 12 11.2	136.41	12	00 52 30.49	21.997	0 48 50.6	159.00
13	23 10 52.80	21.498	10 58 30.5	137.16	13	00 54 42.55	22.025	1 04 45.0	159.12
14	23 13 01.78	21.495	10 44 45.3	137.91	14	00 56 54.79	22.053	1 20 40.0	159.23
15	23 15 10.74	21.491	10 30 55.6	138.65	15	00 59 07.19	22.082	1 36 35.7	159.32
16	23 17 19.67	21.488	10 17 01.5	139.38	16	01 01 19.77	22.112	1 52 31.8	159.38
17	23 19 28.59	21.486	10 03 03.1	140.08	17	01 03 32.53	22.143	2 08 28.3	159.44
18	23 21 37.50	21.484	9 49 00.5	140.78	18	01 05 45.48	22.174	2 24 25.1	159.48
19	23 23 46.40	21.483	9 34 53.7	141.48	19	01 07 58.62	22.206	2 40 22.1	159.51
20	23 25 55.29	21.482	9 20 42.8	142.16	20	01 10 11.95	22.238	2 56 19.2	159.52
21	23 28 04.18	21.482	9 06 27.8	142.83	21	01 12 25.48	22.273	3 12 16.3	159.51
22	23 30 13.07	21.483	8 52 08.8	143.49	22	01 14 39.22	22.307	3 28 13.3	159.48
23	23 32 21.97	21.483	8 37 45.9	144.13	23	01 16 53.16	22.341	3 44 10.0	159.43
24	23 34 30.87	21.485	S. 8 23 19.2	144.77	24	01 19 07.31	22.377	N. 4 00 06.4	159.37

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Thursday 17.					Saturday 19.				
	h m s		° ' "			h m s		° ' "	
00	01 19 07.51	22.377	N. 4 00 06.4	159.37	00	03 11 50.32	24.773	N. 16 00 50.9	133.09
01	01 21 21.68	22.413	4 16 02.4	159.28	01	03 14 19.13	24.831	16 14 06.3	132.03
02	01 23 36.27	22.451	4 31 57.8	159.18	02	03 16 48.29	24.888	16 27 15.3	130.95
03	01 25 51.09	22.488	4 47 52.5	159.06	03	03 19 17.79	24.947	16 40 17.7	129.85
04	01 28 06.13	22.527	5 03 46.5	158.93	04	03 21 47.65	25.006	16 53 13.5	128.73
05	01 30 21.41	22.567	5 19 39.6	158.77	05	03 24 17.86	25.063	17 06 02.5	127.59
06	01 32 36.93	22.606	5 35 31.7	158.59	06	03 26 48.41	25.120	17 18 44.6	126.43
07	01 34 52.68	22.647	5 51 22.7	158.40	07	03 29 19.30	25.178	17 31 19.6	125.24
08	01 37 08.69	22.688	6 07 12.5	158.19	08	03 31 50.54	25.236	17 43 47.5	124.04
09	01 39 24.94	22.730	6 23 01.0	157.96	09	03 34 22.13	25.293	17 56 08.1	122.82
10	01 41 41.45	22.773	6 38 48.0	157.70	10	03 36 54.06	25.349	18 08 21.3	121.58
11	01 43 58.21	22.816	6 54 33.4	157.43	11	03 39 26.32	25.406	18 20 27.0	120.32
12	01 46 15.24	22.860	7 10 17.2	157.15	12	03 41 58.93	25.463	18 32 25.1	119.03
13	01 48 32.53	22.905	7 25 59.2	156.84	13	03 44 31.87	25.518	18 44 15.4	117.73
14	01 50 50.10	22.951	7 41 39.3	156.51	14	03 47 05.15	25.574	18 55 57.9	116.41
15	01 53 07.94	22.996	7 57 17.3	156.16	15	03 49 38.76	25.629	19 07 32.3	115.07
16	01 55 26.05	23.042	8 12 53.2	155.80	16	03 52 12.70	25.684	19 18 58.7	113.71
17	01 57 44.44	23.089	8 28 26.9	155.41	17	03 54 46.97	25.738	19 30 16.8	112.33
18	02 00 03.12	23.138	8 43 58.1	154.99	18	03 57 21.55	25.791	19 41 26.6	110.93
19	02 02 22.09	23.186	8 59 26.8	154.57	19	03 59 56.46	25.845	19 52 27.9	109.51
20	02 04 41.35	23.235	9 14 52.9	154.13	20	04 02 31.69	25.898	20 03 20.7	108.08
21	02 07 00.91	23.284	9 30 16.3	153.66	21	04 05 07.23	25.948	20 14 04.9	106.63
22	02 09 20.76	23.333	9 45 36.8	153.16	22	04 07 43.07	26.000	20 24 40.3	105.16
23	02 11 40.91	23.384	N. 10 00 54.2	152.65	23	04 10 19.23	26.051	N. 20 35 06.8	103.67
Friday 18.					Sunday 20.				
	h m s		° ' "			h m s		° ' "	
00	02 14 01.37	23.435	N. 10 16 08.6	152.13	00	04 12 55.68	26.100	N. 20 45 24.3	102.17
01	02 16 22.13	23.487	10 31 19.8	151.58	01	04 15 32.43	26.149	20 55 32.8	100.65
02	02 18 43.21	23.539	10 46 27.5	151.00	02	04 18 09.47	26.198	21 05 32.1	99.10
03	02 21 04.60	23.592	11 01 31.8	150.42	03	04 20 46.80	26.245	21 15 22.0	97.54
04	02 23 26.31	23.644	11 16 32.5	149.80	04	04 23 24.41	26.292	21 25 02.6	95.98
05	02 25 48.33	23.698	11 31 29.4	149.16	05	04 26 02.30	26.338	21 34 33.7	94.39
06	02 28 10.68	23.753	11 46 22.4	148.50	06	04 28 40.46	26.382	21 43 55.3	92.79
07	02 30 33.36	23.807	12 01 11.4	147.83	07	04 31 18.88	26.425	21 53 07.2	91.18
08	02 32 56.36	23.860	12 15 56.3	147.13	08	04 33 57.56	26.468	22 02 09.4	89.54
09	02 35 19.68	23.915	12 30 37.0	146.42	09	04 36 36.49	26.509	22 11 01.7	87.89
10	02 37 43.34	23.971	12 45 13.3	145.68	10	04 39 15.67	26.550	22 19 44.1	86.23
11	02 40 07.33	24.027	12 59 45.1	144.92	11	04 41 55.09	26.590	22 28 16.5	84.56
12	02 42 31.66	24.083	13 14 12.3	144.13	12	04 44 34.75	26.628	22 36 38.8	82.87
13	02 44 56.33	24.139	13 28 34.7	143.33	13	04 47 14.63	26.665	22 44 50.9	81.17
14	02 47 21.33	24.196	13 42 52.3	142.51	14	04 49 54.73	26.702	22 52 52.8	79.45
15	02 49 46.68	24.253	13 57 04.8	141.66	15	04 52 35.05	26.736	23 00 44.3	77.73
16	02 52 12.37	24.310	14 11 12.2	140.79	16	04 55 15.56	26.769	23 08 25.5	75.99
17	02 54 38.40	24.368	14 25 14.3	139.90	17	04 57 56.28	26.802	23 15 56.2	74.23
18	02 57 04.78	24.425	14 39 11.0	138.99	18	05 00 37.18	26.832	23 23 16.3	72.47
19	02 59 31.50	24.483	14 53 02.2	138.07	19	05 03 18.26	26.862	23 30 25.8	70.70
20	03 01 58.57	24.540	15 06 47.8	137.11	20	05 05 59.52	26.890	23 37 24.7	68.93
21	03 04 25.98	24.598	15 20 27.5	136.13	21	05 08 40.94	26.916	23 44 12.9	67.13
22	03 06 53.75	24.657	15 34 01.4	135.14	22	05 11 22.51	26.942	23 50 50.3	65.33
23	03 09 21.86	24.714	15 47 29.2	134.13	23	05 14 04.24	26.966	23 57 16.9	63.52
24	03 11 50.32	24.773	N. 16 00 50.9	133.09	24	05 16 46.10	26.988	N. 24 03 32.5	61.69

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Monday 21.					Wednesday 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	05 16 46.10	26.988	N. 24 03 32.5	61.69	00	07 25 46.60	26.137	N. 25 24 52.6	26.73
01	05 19 28.10	27.009	24 09 37.2	59.87	01	07 28 23.26	26.082	25 22 07.1	28.43
02	05 22 10.21	27.028	24 15 30.9	58.03	02	07 30 59.58	26.024	25 19 11.5	30.10
03	05 24 52.44	27.047	24 21 13.6	56.19	03	07 33 35.55	25.967	25 16 05.9	31.77
04	05 27 34.77	27.063	24 26 45.2	54.34	04	07 36 11.18	25.908	25 12 50.3	33.43
05	05 30 17.19	27.077	24 32 05.7	52.49	05	07 38 46.45	25.848	25 09 24.8	35.06
06	05 32 59.69	27.089	24 37 15.1	50.63	06	07 41 21.36	25.788	25 05 49.6	36.68
07	05 35 42.26	27.101	24 42 13.2	48.76	07	07 43 55.90	25.725	25 02 04.6	38.30
08	05 38 24.90	27.111	24 47 00.2	46.90	08	07 46 30.06	25.662	24 58 10.0	39.90
09	05 41 07.59	27.119	24 51 36.0	45.02	09	07 49 03.84	25.598	24 54 05.8	41.48
10	05 43 50.33	27.126	24 56 00.4	43.13	10	07 51 37.24	25.533	24 49 52.2	43.06
11	05 46 33.10	27.131	25 00 13.6	41.23	11	07 54 10.24	25.468	24 45 29.1	44.63
12	05 49 15.90	27.134	25 04 15.4	39.36	12	07 56 42.85	25.402	24 40 56.7	46.17
13	05 51 58.71	27.135	25 08 05.9	37.48	13	07 59 15.06	25.333	24 36 15.1	47.69
14	05 54 41.52	27.134	25 11 45.1	35.58	14	08 01 46.85	25.264	24 31 24.4	49.21
15	05 57 24.32	27.133	25 15 12.9	33.69	15	08 04 18.23	25.196	24 26 24.6	50.71
16	06 00 07.11	27.129	25 18 29.4	31.80	16	08 06 49.20	25.126	24 21 15.9	52.19
17	06 02 49.87	27.123	25 21 34.5	29.90	17	08 09 19.74	25.055	24 15 58.3	53.67
18	06 05 32.59	27.116	25 24 28.2	28.01	18	08 11 49.86	24.984	24 10 31.9	55.12
19	06 08 15.26	27.107	25 27 10.6	26.12	19	08 14 19.55	24.913	24 04 56.9	56.56
20	06 10 57.87	27.097	25 29 41.6	24.22	20	08 16 48.81	24.841	23 59 13.2	57.98
21	06 13 40.42	27.084	25 32 01.2	22.33	21	08 19 17.64	24.768	23 53 21.1	59.39
22	06 16 22.88	27.070	25 34 09.6	20.45	22	08 21 46.02	24.694	23 47 20.5	60.79
23	06 19 05.26	27.055	N. 25 36 06.6	18.55	23	08 24 13.97	24.620	N. 23 41 11.6	62.17
Tuesday 22.					Thursday 24.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	06 21 47.54	27.038	N. 25 37 52.2	16.66	00	08 26 41.46	24.545	N. 23 34 54.5	63.53
01	06 24 29.71	27.018	25 39 26.5	14.78	01	08 29 08.51	24.471	23 28 29.3	64.88
02	06 27 11.75	26.997	25 40 49.6	12.90	02	08 31 35.11	24.395	23 21 56.0	66.21
03	06 29 53.67	26.974	25 42 01.3	11.03	03	08 34 01.25	24.319	23 15 14.8	67.52
04	06 32 35.44	26.949	25 43 01.9	09.16	04	08 36 26.91	24.244	23 08 25.8	68.82
05	06 35 17.06	26.924	25 43 51.2	07.29	05	08 38 52.18	24.168	23 01 29.0	70.11
06	06 37 58.53	26.897	25 44 29.4	05.43	06	08 41 16.96	24.091	22 54 24.5	71.38
07	06 40 39.82	26.867	25 44 56.4	03.58	07	08 43 41.27	24.014	22 47 12.5	72.63
08	06 43 20.93	26.837	25 45 12.3	01.73	08	08 46 05.13	23.938	22 39 53.0	73.86
09	06 46 01.86	26.804	25 45 17.1	00.12	09	08 48 28.52	23.860	22 32 26.2	75.08
10	06 48 42.58	26.770	25 45 10.9	01.95	10	08 50 51.45	23.783	22 24 52.1	76.28
11	06 51 23.10	26.734	25 44 53.7	03.78	11	08 53 13.92	23.706	22 17 10.8	77.48
12	06 54 03.39	26.697	25 44 25.5	05.60	12	08 55 35.92	23.628	22 09 22.4	78.65
13	06 56 43.46	26.658	25 43 46.5	07.42	13	08 57 57.46	23.551	22 01 27.0	79.80
14	06 59 23.28	26.617	25 42 56.5	09.23	14	09 00 18.53	23.473	21 53 24.8	80.94
15	07 02 02.86	26.576	25 41 55.8	11.02	15	09 02 39.14	23.396	21 45 15.7	82.07
16	07 04 42.19	26.533	25 40 44.3	12.81	16	09 04 59.28	23.318	21 36 59.9	83.18
17	07 07 21.25	26.488	25 39 22.1	14.58	17	09 07 18.96	23.241	21 28 37.6	84.27
18	07 10 00.04	26.442	25 37 49.3	16.35	18	09 09 38.17	23.163	21 20 08.7	85.35
19	07 12 38.55	26.394	25 36 05.9	18.11	19	09 11 56.92	23.086	21 11 33.4	86.42
20	07 15 16.77	26.345	25 34 12.0	19.85	20	09 14 15.20	23.008	21 02 51.7	87.47
21	07 17 54.69	26.295	25 32 07.7	21.58	21	09 16 33.02	22.932	20 54 03.8	88.49
22	07 20 32.31	26.244	25 29 53.0	23.32	22	09 18 50.38	22.855	20 45 09.8	89.51
23	07 23 09.62	26.191	25 27 27.9	25.03	23	09 21 07.28	22.778	20 36 09.7	90.51
24	07 25 46.60	26.137	N. 25 24 52.6	26.73	24	09 23 23.72	22.702	N. 20 27 03.7	91.49

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10 ^m	Declination.	Var. in 10 ^m	Hour	Right Ascension.	Var. in 10 ^m	Declination.	Var. in 10 ^m
Friday 25.					Sunday 27.				
	h m s		° ' "			h m s		° ' "	
00	09 23 23.72	22.702	N. 20 27 03.7	61.49	00	11 04 22.17	16.502	N. 11 40 58.0	122.85
01	09 25 39.70	22.626	20 17 51.8	92.47	01	11 06 19.59	19.546	11 28 39.8	123.22
02	09 27 55.27	22.550	20 08 34.1	93.42	02	11 08 16.72	19.468	11 16 19.4	123.58
03	09 30 10.30	22.473	19 59 10.8	94.36	03	11 10 13.50	19.450	11 03 56.9	123.92
04	09 32 24.91	22.398	19 49 11.8	95.29	04	11 12 10.12	19.403	10 51 32.4	124.25
05	09 34 39.08	22.323	19 40 07.3	96.20	05	11 14 06.40	19.358	10 39 05.9	124.58
06	09 36 52.79	22.248	19 30 27.4	97.09	06	11 16 02.41	19.313	10 26 57.4	124.91
07	09 39 09.06	22.174	19 20 42.2	97.97	07	11 17 58.15	19.268	10 14 07.0	125.22
08	09 41 18.88	22.100	19 10 51.8	98.83	08	11 19 53.62	19.224	10 01 54.8	125.51
09	09 43 31.26	22.027	19 00 56.2	99.69	09	11 21 48.84	19.182	9 49 00.9	125.80
10	09 45 43.20	21.953	18 50 55.5	100.53	10	11 23 43.85	19.139	9 36 25.2	126.08
11	09 47 54.70	21.880	18 40 49.8	101.36	11	11 25 38.51	19.098	9 23 47.9	126.35
12	09 50 05.76	21.808	18 30 39.2	102.17	12	11 27 32.98	19.058	9 11 09.0	126.61
13	09 52 16.39	21.737	18 20 23.8	102.96	13	11 29 27.21	19.018	8 58 28.6	126.87
14	09 54 26.60	21.665	18 10 03.7	103.73	14	11 31 21.19	18.978	8 45 46.6	127.12
15	09 56 36.37	21.593	17 59 39.0	104.50	15	11 33 14.95	18.941	8 33 03.2	127.35
16	09 58 45.72	21.523	17 49 09.7	105.26	16	11 35 08.48	18.903	8 20 18.4	127.58
17	10 00 54.65	21.453	17 38 55.9	106.01	17	11 37 01.78	18.866	8 07 32.3	127.80
18	10 03 03.16	21.384	17 27 57.6	106.73	18	11 38 54.87	18.830	7 54 44.8	128.02
19	10 05 11.26	21.310	17 17 15.1	107.44	19	11 40 47.74	18.794	7 41 56.1	128.21
20	10 07 18.95	21.247	17 06 28.3	108.15	20	11 42 40.40	18.760	7 29 06.3	128.40
21	10 09 26.22	21.179	16 55 37.3	108.83	21	11 44 32.86	18.726	7 16 15.3	128.59
22	10 11 33.10	21.113	16 44 42.3	109.50	22	11 46 25.11	18.693	7 03 23.2	128.77
23	10 13 39.57	21.045	N. 16 33 43.3	110.17	23	11 48 17.17	18.661	N. 6 50 30.1	128.93
Saturday 26.					Monday 28.				
00	10 15 45.04	20.979	N. 16 22 40.3	110.82	00	11 50 09.04	18.620	N. 6 37 36.0	129.09
01	10 17 51.32	20.914	16 11 53.5	111.45	01	11 52 00.72	18.588	6 24 41.0	129.25
02	10 19 56.61	20.849	16 00 22.9	112.08	02	11 53 52.22	18.568	6 11 45.0	129.40
03	10 22 01.51	20.785	15 49 08.6	112.69	03	11 55 43.54	18.539	5 58 48.2	129.53
04	10 24 06.03	20.722	15 37 50.6	113.20	04	11 57 34.69	18.511	5 45 50.6	129.66
05	10 26 10.17	20.658	15 26 29.1	113.88	05	11 59 25.67	18.483	5 32 52.3	129.78
06	10 28 13.93	20.596	15 15 04.1	114.45	06	12 01 16.48	18.455	5 19 53.2	129.90
07	10 30 17.32	20.535	15 03 35.7	115.01	07	12 03 07.13	18.429	5 06 53.5	130.00
08	10 32 20.35	20.474	14 52 04.0	115.56	08	12 04 57.63	18.404	4 53 53.2	130.10
09	10 34 23.01	20.413	14 40 29.0	116.10	09	12 06 47.98	18.379	4 40 52.3	130.20
10	10 36 25.31	20.354	14 28 50.8	116.63	10	12 08 38.18	18.355	4 27 50.8	130.28
11	10 38 27.26	20.296	14 17 09.5	117.14	11	12 10 28.24	18.332	4 14 48.9	130.35
12	10 40 28.86	20.238	14 05 25.1	117.65	12	12 12 18.16	18.309	4 01 46.6	130.42
13	10 42 30.11	20.180	13 53 57.7	118.14	13	12 14 07.95	18.287	3 48 43.9	130.48
14	10 44 31.02	20.123	13 41 47.4	118.62	14	12 15 57.60	18.266	3 35 40.8	130.54
15	10 46 31.59	20.067	13 29 54.3	119.08	15	12 17 47.14	18.246	3 22 37.4	130.58
16	10 48 31.82	20.011	13 17 58.4	119.55	16	12 19 36.55	18.225	3 09 33.8	130.63
17	10 50 31.72	19.957	13 05 59.7	120.00	17	12 21 25.84	18.207	2 56 29.9	130.66
18	10 52 31.30	19.903	12 53 58.4	120.44	18	12 23 15.03	18.188	2 43 25.0	130.68
19	10 54 30.56	19.850	12 41 54.4	120.87	19	12 25 04.10	18.171	2 30 21.8	130.70
20	10 56 29.50	19.797	12 29 48.0	121.28	20	12 26 53.08	18.154	2 17 17.5	130.71
21	10 58 28.12	19.745	12 17 39.0	121.69	21	12 28 41.95	18.138	2 04 13.3	130.71
22	11 00 26.44	19.695	12 05 27.7	122.08	22	12 30 30.73	18.123	1 51 09.0	130.71
23	11 02 24.46	19.644	11 53 14.0	122.48	23	12 32 19.42	18.108	1 38 04.8	130.70
24	11 04 22.17	19.594	N. 11 40 58.0	122.85	24	12 34 08.02	18.093	N. 1 25 00.6	130.68

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Tuesday 29.					Thursday 31.				
	h m s	s	° ' " "			h m s	s	° ' " "	
00	12 34 08.02	18.093	N. 1 25 00.6	130.68	00	14 00 39.97	18.209	S. 8 47 24.8	121.91
01	12 35 56.54	18.081	1 11 56.6	130.66	01	14 02 29.28	18.227	8 59 35.2	121.56
02	12 37 44.99	18.068	0 58 52.7	130.63	02	14 04 18.69	18.244	9 11 43.5	121.20
03	12 39 33.36	18.056	0 45 49.0	130.59	03	14 06 08.21	18.263	9 23 49.6	120.83
04	12 41 21.66	18.045	0 32 45.6	130.54	04	14 07 57.85	18.283	9 35 53.5	120.47
05	12 43 09.90	18.034	0 19 42.5	130.49	05	14 09 47.61	18.303	9 47 55.2	120.09
06	12 44 58.07	18.024	0 06 39.7	130.43	06	14 11 37.49	18.323	9 59 54.6	119.71
07	12 46 46.19	18.016	0 06 22.7	130.37	07	14 13 27.49	18.343	10 11 51.7	119.32
08	12 48 34.26	18.008	0 19 24.7	130.29	08	14 15 17.61	18.365	10 23 46.4	118.92
09	12 50 22.28	18.000	0 32 26.2	130.22	09	14 17 07.87	18.388	10 35 38.7	118.51
10	12 52 10.26	17.993	0 45 27.3	130.13	10	14 18 58.26	18.409	10 47 28.5	118.09
11	12 53 58.19	17.986	0 58 27.8	130.04	11	14 20 48.78	18.433	10 59 15.8	117.68
12	12 55 46.09	17.981	1 11 27.8	129.95	12	14 22 39.45	18.457	11 11 00.6	117.25
13	12 57 33.96	17.976	1 24 27.2	129.84	13	14 24 30.26	18.481	11 22 42.8	116.81
14	12 59 21.80	17.972	1 37 25.9	129.73	14	14 26 21.22	18.505	11 34 22.3	116.37
15	13 01 09.62	17.968	1 50 23.9	129.60	15	14 28 12.32	18.529	11 45 59.2	115.93
16	13 02 57.42	17.966	2 03 21.1	129.48	16	14 30 03.57	18.555	11 57 33.4	115.47
17	13 04 45.21	17.963	2 16 17.6	129.35	17	14 31 54.98	18.582	12 09 04.8	115.00
18	13 06 32.98	17.961	2 29 13.3	129.21	18	14 33 46.55	18.608	12 20 33.4	114.53
19	13 08 20.74	17.960	2 42 08.1	129.06	19	14 35 38.28	18.635	12 31 59.1	114.05
20	13 10 08.50	17.960	2 55 02.0	128.91	20	14 37 30.17	18.662	12 43 22.0	113.57
21	13 11 56.26	17.961	3 07 55.0	128.75	21	14 39 22.22	18.690	12 54 41.9	113.07
22	13 13 44.03	17.962	3 20 47.0	128.58	22	14 41 14.45	18.718	13 05 58.8	112.56
23	13 15 31.80	17.963	3 33 38.0	128.41	23	14 43 06.84	18.747	S. 13 17 12.6	112.05
Wednesday 30.					Friday, JUNE 1.				
00	13 17 19.59	17.966	S. 3 46 27.9	128.23	00	14 44 59.41	18.777	S. 13 28 23.4	111.54
01	13 19 07.39	17.969	3 59 16.7	128.04					
02	13 20 55.22	17.973	4 12 04.4	127.85					
03	13 22 43.06	17.977	4 24 50.9	127.65					
04	13 24 30.94	17.982	4 37 36.2	127.45					
05	13 26 18.84	17.988	4 50 20.3	127.23					
06	13 28 06.79	17.994	5 03 03.0	127.01					
07	13 29 54.77	18.000	5 15 44.4	126.79					
08	13 31 42.79	18.008	5 28 24.5	126.56					
09	13 33 30.86	18.016	5 41 03.1	126.31					
10	13 35 18.98	18.024	5 53 40.2	126.07					
11	13 37 07.15	18.033	6 06 15.9	125.82					
12	13 38 55.38	18.043	6 18 50.0	125.56					
13	13 40 43.67	18.054	6 31 22.6	125.29					
14	13 42 32.03	18.066	6 43 53.5	125.02					
15	13 44 20.46	18.077	6 56 22.8	124.74					
16	13 46 08.95	18.089	7 08 50.4	124.45					
17	13 47 57.53	18.103	7 21 16.2	124.16					
18	13 49 46.18	18.116	7 33 40.3	123.86					
19	13 51 34.92	18.130	7 46 02.5	123.55					
20	13 53 23.74	18.145	7 58 22.9	123.23					
21	13 55 12.66	18.160	8 10 41.3	122.91					
22	13 57 01.66	18.176	8 22 57.8	122.58					
23	13 58 50.77	18.193	8 35 12.3	122.25					
4	14 00 39.97	18.209	S. 8 47 24.8	121.91					

PHASES OF THE MOON.

		h	m
May 4	○ Full Moon ..	20	11.8
" 12	☾ Last Quarter ..	20	50.3
" 19	☾ New Moon ..	13	14.1
" 26	☽ First Quarter ..	09	11.6

		h
May 5	☾ Apogee ..	04.5
" 19	☾ Perigee ..	05.6

AT APPARENT NOON.

Date.		THE SUN'S				Sidercal Time of the Semi- diameter passing the Meridian.	Equation of Time, to be subtracted from:	Var. in 1 hour.
		Apparent Right Ascension.	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.		added to Apparent Time.	
		h m s	s	° ' "	"	m s	m s	s
Frid.	1	04 36 30.84	10.230	N. 22 03 45.6	20.36	1 08.36	2 21.68	0.372
Sat.	2	04 40 36.55	10.246	22 11 42.8	19.40	1 08.42	2 12.55	0.388
Sun.	3	04 44 42.64	10.262	22 19 16.7	18.43	1 08.47	2 03.05	0.404
Mon.	4	04 48 49.10	10.277	22 26 27.3	17.45	1 08.52	1 53.17	0.419
Tues.	5	04 52 55.91	10.291	22 33 14.4	16.47	1 08.57	1 42.95	0.433
Wed.	6	04 57 05.05	10.305	22 39 37.8	15.48	1 08.61	1 32.39	0.447
Thur.	7	05 01 10.52	10.318	22 45 37.4	14.49	1 08.65	1 21.51	0.460
Frid.	8	05 05 18.29	10.330	22 51 13.2	13.49	1 08.69	1 10.33	0.472
Sat.	9	05 09 26.35	10.342	22 56 24.9	12.49	1 08.73	0 58.86	0.484
Sun.	10	05 13 34.68	10.352	23 01 12.5	11.48	1 08.76	0 47.12	0.494
Mon.	11	05 17 43.26	10.362	23 05 35.8	10.47	1 08.79	0 35.13	0.504
Tues.	12	05 21 52.06	10.371	23 09 34.9	9.45	1 08.82	0 22.92	0.513
Wed.	13	05 26 01.08	10.380	23 13 09.4	8.43	1 08.84	0 10.50	0.521
Thur.	14	05 30 10.27	10.387	23 16 19.5	7.41	1 08.86	0 02.11	0.529
Frid.	15	05 34 19.63	10.393	23 19 05.0	6.38	1 08.88	0 14.87	0.535
Sat.	16	05 38 29.11	10.397	23 21 25.7	5.35	1 08.89	0 27.76	0.539
Sun.	17	05 42 38.69	10.401	23 23 21.8	4.32	1 08.91	0 40.75	0.543
Mon.	18	05 46 48.35	10.403	23 24 53.0	3.29	1 08.91	0 53.81	0.545
Tues.	19	05 50 55.05	10.405	23 25 59.5	2.25	1 08.92	1 06.92	0.547
Wed.	20	05 55 07.76	10.405	23 26 41.1	1.21	1 08.92	1 20.03	0.547
Thur.	21	05 59 17.46	10.403	23 26 57.8	0.18	1 08.92	1 33.14	0.545
Frid.	22	06 03 27.12	10.401	23 26 49.7	0.86	1 08.91	1 46.20	0.543
Sat.	23	06 07 36.71	10.398	23 26 16.7	1.89	1 08.91	1 59.20	0.540
Sun.	24	06 11 46.20	10.393	23 25 18.9	2.92	1 08.90	2 12.10	0.535
Mon.	25	06 15 55.58	10.388	23 23 56.4	3.96	1 08.88	2 24.89	0.530
Tues.	26	06 20 04.83	10.382	23 22 09.1	4.98	1 08.86	2 37.54	0.524
Wed.	27	06 24 13.91	10.375	23 19 57.2	6.01	1 08.84	2 50.03	0.517
Thur.	28	06 28 22.80	10.367	23 17 20.6	7.03	1 08.82	3 02.33	0.509
Frid.	29	06 32 31.50	10.358	23 14 19.6	8.05	1 08.79	3 14.44	0.500
Sat.	30	06 36 39.97	10.348	23 10 54.2	9.07	1 08.76	3 26.32	0.490
Sun.	31	06 40 48.20	10.338	N. 23 07 04.4	10.08	1 08.73	3 37.96	0.480

* Mean Time of the Semidiameter passing may be found by subtracting 0.19 from the Sidercal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be subtracted from	Sidereal Time.
		<i>Apparent</i> Right Ascension.	<i>Apparent</i> Declination.	Semi-diameter.*	<i>added to Apparent Time.</i>	
		h m s	° ' "	"	:"	h m s
Frid.	1	04 36 31.24	N. 22 03 46.4	15 47.68	2 21.67	04 38 52.91
Sat.	2	04 40 36.93	22 11 43.5	15 47.55	2 12.54	04 42 49.46
Sun.	3	04 44 42.99	22 19 17.4	15 47.41	2 03.03	04 46 46.02
Mon.	4	04 48 49.42	22 26 27.9	15 47.28	1 53.16	04 50 42.58
Tues.	5	04 52 56.20	22 33 14.8	15 47.16	1 42.94	04 54 39.14
Wed.	6	04 57 03.32	22 39 38.2	15 47.03	1 32.38	04 58 35.70
Thur.	7	05 01 10.76	22 45 37.8	15 46.91	1 21.50	05 02 32.25
Frid.	8	05 05 18.50	22 51 13.4	15 46.79	1 10.32	05 06 28.81
Sat.	9	05 09 26.52	22 56 25.1	15 46.68	0 58.85	05 10 25.37
Sun.	10	05 13 34.82	23 01 12.6	15 46.57	0 47.11	05 14 21.93
Mon.	11	05 17 45.36	23 05 35.9	15 46.46	0 35.13	05 18 18.49
Tues.	12	05 21 52.13	23 09 34.9	15 46.36	0 22.91	05 22 15.04
Wed.	13	05 26 01.11	23 13 09.5	15 46.26	0 10.49	05 26 11.60
Thur.	14	05 30 10.27	23 16 19.5	15 46.17	0 02.11	05 30 08.16
Frid.	15	05 34 19.58	23 19 04.9	15 46.08	0 14.87	05 34 04.72
Sat.	16	05 38 29.03	23 21 25.7	15 46.00	0 27.75	05 38 01.28
Sun.	17	05 42 38.58	23 23 21.7	15 45.92	0 40.74	05 41 57.83
Mon.	18	05 46 48.19	23 24 53.0	15 45.85	0 53.80	05 45 54.39
Tues.	19	05 50 57.86	23 25 59.4	15 45.79	1 06.91	05 49 50.95
Wed.	20	05 55 07.53	23 26 41.0	15 45.73	1 20.02	05 53 47.51
Thur.	21	05 59 17.19	23 26 57.8	15 45.67	1 33.13	05 57 44.07
Frid.	22	06 03 26.81	23 26 49.7	15 45.62	1 46.19	06 01 40.62
Sat.	23	06 07 36.36	23 26 16.8	15 45.58	1 59.18	06 05 37.18
Sun.	24	06 11 45.82	23 25 19.0	15 45.54	2 12.08	06 09 33.74
Mon.	25	06 15 55.17	23 23 56.5	15 45.51	2 24.87	06 13 30.30
Tues.	26	06 20 04.37	23 22 09.3	15 45.48	2 37.52	06 17 26.86
Wed.	27	06 24 13.42	23 19 57.4	15 45.45	2 50.00	06 21 23.42
Thur.	28	06 28 22.28	23 17 21.0	15 45.43	3 02.31	06 25 19.97
Frid.	29	06 32 30.94	23 14 20.1	15 45.41	3 14.41	06 29 16.53
Sat.	30	06 36 39.38	23 10 54.7	15 45.39	3 26.29	06 33 13.09
Sun.	31	06 40 47.57	N. 23 07 05.0	15 45.38	3 37.93	06 37 09.65

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semi-diameter.		Horizontal Parallax.	
	12h.	12h.	12h.	12h.	ch.	12h.	ch.	12h.
	° ' "	"		h m s	' "	' "	' "	' "
1	70 43 17.7	S. 0.07	0.0061424	07 21 52.78	14 42.90	14 42.83	54 00.34	54 00.07
2	71 40 44.7	0.10	0.0062045	07 17 56.87	14 43.16	14 43.09	54 01.31	54 03.97
3	72 38 10.6	0.32	0.0062653	07 14 00.96	14 44.98	14 44.41	54 07.96	54 13.23
4	73 35 35.6	0.45	0.0063248	07 10 05.04	14 48.17	14 50.26	54 19.70	54 27.36
5	74 32 59.7	0.57	0.0063831	07 06 09.13	14 52.66	14 55.38	54 36.18	54 46.15
6	75 30 23.1	0.68	0.0064400	07 02 13.22	14 58.41	15 01.77	54 57.28	55 09.59
7	76 27 45.7	0.76	0.0064956	06 58 17.31	15 05.44	15 09.46	55 23.09	55 37.81
8	77 25 07.6	0.82	0.0065496	06 54 21.40	15 13.80	15 18.48	55 53.76	56 10.95
9	78 22 29.0	0.85	0.0066022	06 50 25.48	15 23.49	15 28.82	56 29.34	56 48.89
10	79 19 49.9	0.85	0.0066530	06 46 29.57	15 34.44	15 40.21	57 00.51	57 31.07
11	80 17 10.3	0.82	0.0067021	06 42 33.66	15 46.39	15 52.60	57 53.38	58 10.16
12	81 14 30.3	0.76	0.0067492	06 38 37.75	15 58.86	16 05.07	58 39.16	59 01.93
13	82 11 46.9	0.66	0.0067943	06 34 41.84	16 11.09	16 16.80	59 24.04	59 45.00
14	83 09 09.1	0.54	0.0068369	06 30 45.92	16 22.05	16 26.68	60 04.27	60 21.25
15	84 06 28.2	0.40	0.0068772	06 26 50.01	16 30.53	16 33.48	60 55.41	60 46.23
16	85 03 46.4	0.26	0.0069150	06 22 54.10	16 35.39	16 36.18	61 53.25	61 30.12
17	86 01 01.4	0.12	0.0069502	06 18 58.19	16 35.77	16 34.11	62 54.65	62 48.73
18	86 58 21.9	N. 0.02	0.0069827	06 15 02.28	16 31.38	16 27.40	63 58.51	63 24.22
19	87 55 38.8	0.15	0.0070125	06 11 06.37	16 22.50	16 16.81	65 06.27	64 45.14
20	88 52 55.2	0.25	0.0070398	06 07 10.45	16 10.58	16 03.40	66 21.45	65 55.81
21	89 50 11.9	0.32	0.0070645	06 03 14.54	15 50.06	15 48.55	68 28.85	67 21.31
22	90 47 26.0	0.37	0.0070868	05 59 18.63	15 41.02	15 35.64	71 33.60	68 46.57
23	91 44 41.5	0.39	0.0071068	05 55 22.71	15 26.51	15 19.76	75 40.41	69 15.65
24	92 41 51.3	0.38	0.0071246	05 51 26.80	15 15.48	15 07.74	80 52.59	69 51.51
25	93 39 07.6	0.33	0.0071404	05 47 30.89	15 02.59	14 58.07	87 12.61	70 56.02
26	94 36 20.3	0.26	0.0071542	05 43 34.98	14 54.20	14 51.00	94 41.83	71 30.08
27	95 33 32.5	0.17	0.0071662	05 39 39.07	14 48.46	14 46.57	102 20.76	71 13.83
28	96 31 44.3	N. 0.07	0.0071763	05 35 43.15	14 45.32	14 44.67	110 09.22	71 06.83
29	97 29 55.7	S. 0.04	0.0071848	05 31 47.24	14 41.59	14 45.06	118 06.55	71 08.26
30	98 28 06.8	0.16	0.0071916	05 27 51.33	14 46.02	14 47.44	126 11.79	71 16.99
31	99 22 17.7	S. 0.28	0.0071968	05 23 55.42	14 49.27	14 51.48	134 23.73	71 31.82

MEAN TIME.

Day of the Month.	THE MOON'S						
	Longitude.		Latitude.		Age.	Meridian Passage.	
	oh.	12h.	oh.	12h.	oh.	Upper.	Lower.
	° ' "	° ' "	° ' "	° ' "	d	h m	h m
1	222 57 43.9	228 51 40.2	N. 2 22 21.4	N. 1 52 22.1	12.45	22 48.0	10 26.1
2	234 45 45.7	240 40 19.4	1 21 09.7	N. 0 49 02.3	13.45	23 33.5	11 10.4
3	246 35 39.3	252 32 02.4	N. 0 16 19.1	S. 0 16 40.4	14.45	* *	11 57.2
4	258 29 44.8	264 29 02.5	S. 0 49 36.1	1 22 07.2	15.45	00 21.6	12 46.6
5	270 30 10.7	276 33 24.8	1 53 53.1	2 24 32.7	16.45	01 12.0	13 37.8
6	282 39 00.1	288 47 12.4	2 53 44.8	3 21 08.9	17.45	02 03.9	14 30.1
7	294 58 17.5	301 12 31.8	3 46 24.4	4 09 11.4	18.45	02 56.2	15 22.2
8	307 30 11.9	313 51 34.8	4 29 10.5	4 46 03.3	19.45	03 47.9	16 13.3
9	320 16 57.2	326 46 35.9	4 59 32.3	5 09 21.3	20.45	04 38.3	17 02.9
10	333 20 46.6	339 59 43.7	5 15 15.7	5 17 02.6	21.45	05 27.2	17 51.2
11	346 43 39.6	353 32 44.1	5 14 31.4	5 07 34.4	22.45	06 15.1	18 38.9
12	0 27 03.0	7 26 37.6	4 56 07.3	4 40 09.7	23.45	07 02.9	19 27.0
13	14 31 23.5	21 41 10.2	4 19 45.9	3 55 05.9	24.45	07 51.5	20 16.7
14	28 55 39.5	36 14 25.9	3 26 25.3	2 54 06.5	25.45	08 42.5	21 09.1
15	43 36 55.8	51 02 27.9	2 18 38.1	1 40 35.2	26.45	09 36.8	22 05.4
16	58 30 13.7	65 59 18.7	S. 1 00 38.2	S. 0 19 32.3	27.45	10 35.2	23 05.9
17	73 28 43.8	80 57 27.7	N. 0 21 54.8	N. 1 02 54.2	28.45	11 37.4	* *
18	88 24 27.9	95 48 44.1	1 42 38.2	2 20 22.1	0.14	12 41.6	00 09.4
19	103 09 19.9	110 25 24.6	2 55 25.6	3 27 14.8	1.14	13 45.1	01 13.7
20	117 36 15.4	124 41 18.0	3 55 22.6	4 19 28.4	2.14	14 45.2	02 15.7
21	131 40 07.0	138 32 27.3	4 39 19.3	4 54 48.3	3.14	15 40.4	03 13.5
22	145 18 12.6	151 57 25.2	5 05 54.1	5 12 40.4	4.14	16 30.7	04 06.1
23	158 30 15.4	164 57 00.2	5 15 14.0	5 13 44.9	5.14	17 16.7	04 54.1
24	171 18 02.1	177 33 48.4	5 08 25.2	4 59 28.3	6.14	17 59.7	05 38.5
25	183 44 49.8	189 51 39.5	4 47 08.2	4 31 39.7	7.14	18 40.9	06 20.4
26	195 54 52.3	201 55 04.0	4 13 17.8	3 52 17.6	8.14	19 21.4	07 01.2
27	207 52 50.6	213 48 47.4	3 28 54.3	3 03 23.4	9.14	20 02.6	07 41.9
28	219 43 29.2	225 37 29.7	2 36 00.2	2 07 00.9	10.14	20 45.1	08 23.6
29	231 31 20.6	237 25 31.9	1 36 41.7	1 05 19.7	11.14	21 29.8	09 07.1
30	243 20 31.5	249 16 44.8	N. 0 33 12.6	N. 0 00 38.6	12.14	22 17.1	09 53.1
31	255 14 35.2	261 14 23.4	S. 0 32 03.0	S. 1 04 32.1	13.14	23 07.0	10 41.8

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Friday 1.					Sunday 3.				
	h m s		° ' "			h m s		° ' "	
00	14 44 59.41	18.777	S. 13 28 23.4	111.54	00	16 19 09.70	20.556	S. 21 09 05.5	77.28
01	14 46 52.16	18.806	13 39 31.1	111.02	01	16 21 13.16	20.597	21 16 46.5	76.37
02	14 48 45.08	18.836	13 50 35.6	110.48	02	16 23 16.86	20.638	21 24 21.9	75.44
03	14 50 38.19	18.867	14 01 36.8	109.93	03	16 25 20.81	20.679	21 31 51.8	74.52
04	14 52 31.48	18.898	14 12 34.8	109.39	04	16 27 25.01	20.720	21 39 16.1	73.58
05	14 54 24.96	18.929	14 23 29.5	108.83	05	16 29 29.45	20.761	21 46 34.7	72.63
06	14 56 18.63	18.962	14 34 20.8	108.27	06	16 31 34.14	20.802	21 53 47.6	71.67
07	14 58 12.50	18.993	14 45 08.7	107.70	07	16 33 39.07	20.842	22 00 54.7	70.70
08	15 00 06.55	19.026	14 55 53.2	107.12	08	16 35 44.24	20.882	22 07 56.0	69.73
09	15 02 00.81	19.059	15 06 34.1	106.53	09	16 37 49.65	20.923	22 14 51.5	68.76
10	15 03 55.26	19.092	15 17 11.6	105.94	10	16 39 55.31	20.963	22 21 41.1	67.77
11	15 05 49.91	19.126	15 27 45.4	105.33	11	16 42 01.21	21.003	22 28 24.7	66.77
12	15 07 44.77	19.160	15 38 15.6	104.73	12	16 44 07.35	21.043	22 35 02.3	65.77
13	15 09 39.83	19.194	15 48 42.1	104.10	13	16 46 13.73	21.083	22 41 33.9	64.76
14	15 11 35.10	19.230	15 59 04.8	103.48	14	16 48 20.34	21.122	22 47 59.4	63.73
15	15 13 30.59	19.265	16 09 23.8	102.84	15	16 50 27.19	21.162	22 54 18.7	62.70
16	15 15 26.28	19.300	16 19 38.9	102.20	16	16 52 34.28	21.201	23 00 31.8	61.67
17	15 17 22.19	19.336	16 29 50.2	101.55	17	16 54 41.60	21.240	23 06 38.7	60.63
18	15 19 18.31	19.372	16 39 57.5	100.89	18	16 56 49.16	21.278	23 12 30.4	59.58
19	15 21 14.65	19.409	16 50 00.9	100.23	19	16 58 56.94	21.316	23 18 13.7	58.52
20	15 23 11.22	19.446	17 00 00.2	99.55	20	17 01 04.95	21.354	23 24 11.6	57.45
21	15 25 08.00	19.482	17 09 55.5	98.87	21	17 03 13.19	21.393	23 30 23.1	56.38
22	15 27 05.00	19.519	17 19 46.6	98.17	22	17 05 21.66	21.430	23 36 34.2	55.30
23	15 29 02.23	19.558	S. 17 29 33.5	97.47	23	17 07 30.35	21.468	S. 23 41 06.7	54.21
Saturday 2.					Monday 4.				
00	15 30 59.69	19.595	S. 17 39 16.2	96.77	00	17 09 39.37	21.504	S. 23 46 28.7	53.12
01	15 32 57.37	19.633	17 48 54.7	96.05	01	17 11 48.40	21.541	23 51 44.1	52.02
02	15 34 55.29	19.673	17 58 28.8	95.32	02	17 13 57.76	21.578	23 56 52.0	50.91
03	15 36 53.44	19.710	18 07 58.5	94.59	03	17 16 07.33	21.613	24 01 55.1	49.78
04	15 38 51.81	19.748	18 17 23.9	93.85	04	17 18 17.11	21.648	24 06 50.2	48.66
05	15 40 50.42	19.788	18 26 44.7	93.10	05	17 20 27.10	21.683	24 11 53.1	47.54
06	15 42 49.27	19.828	18 36 01.1	92.35	06	17 22 37.31	21.718	24 16 50.0	46.42
07	15 44 48.35	19.867	18 45 12.9	91.58	07	17 24 47.72	21.752	24 21 55.5	45.29
08	15 46 47.67	19.907	18 54 20.0	90.80	08	17 26 58.33	21.786	24 26 53.5	44.11
09	15 48 47.23	19.947	19 03 22.5	90.03	09	17 29 09.15	21.819	24 31 45.1	42.95
10	15 50 47.03	19.986	19 12 20.3	89.23	10	17 31 20.10	21.852	24 36 30.2	41.77
11	15 52 47.06	20.026	19 21 13.3	88.43	11	17 33 31.37	21.884	24 41 06.4	40.62
12	15 54 47.34	20.067	19 30 01.5	87.63	12	17 35 42.77	21.916	24 45 46.7	39.44
13	15 56 47.86	20.107	19 38 44.8	86.81	13	17 37 54.36	21.948	24 50 20.7	38.27
14	15 58 48.61	20.147	19 47 23.2	85.98	14	17 40 06.14	21.978	24 54 55.8	37.15
15	16 00 49.62	20.188	19 55 56.6	85.15	15	17 42 18.10	22.009	24 59 24.0	35.98
16	16 02 50.87	20.229	20 04 25.0	84.32	16	17 44 30.25	22.039	25 03 50.3	34.68
17	16 04 52.37	20.270	20 12 48.4	83.47	17	17 46 42.57	22.068	25 08 17.8	33.48
18	16 06 54.11	20.310	20 21 06.6	82.60	18	17 48 55.07	22.097	25 12 38.4	32.26
19	16 08 56.09	20.351	20 29 19.6	81.73	19	17 51 07.73	22.125	25 16 47.9	31.05
20	16 10 58.32	20.393	20 37 27.4	80.87	20	17 53 20.57	22.153	25 20 50.6	29.83
21	16 13 00.80	20.433	20 45 30.0	79.98	21	17 55 33.56	22.179	25 24 45.9	28.60
22	16 15 03.52	20.474	20 53 27.2	79.09	22	17 57 46.72	22.206	25 28 33.8	27.37
23	16 17 06.49	20.515	21 01 19.1	78.19	23	18 00 00.03	22.232	25 32 14.3	26.13
24	16 19 09.70	20.556	S. 21 09 05.5	77.28	24	18 02 13.50	22.258	S. 25 20 47.4	24.89

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Tuesday 5.					Thursday 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	18 02 13.50	22.258	S. 25 20 47.4	24.89	00	19 50 38.92	22.644	S. 24 51 20.2	37.65
01	18 04 27.12	22.282	25 23 13.0	23.65	01	19 52 54.76	22.635	24 47 30.4	38.95
02	18 06 40.88	22.306	25 25 31.2	22.40	02	19 55 10.54	22.625	24 43 32.8	40.25
03	18 08 54.79	22.329	25 27 41.8	21.13	03	19 57 26.26	22.615	24 39 27.4	41.55
04	18 11 08.83	22.352	25 29 44.8	19.88	04	19 59 41.92	22.604	24 35 14.2	42.85
05	18 13 23.01	22.372	25 31 40.3	18.62	05	20 01 57.51	22.593	24 30 53.2	44.14
06	18 15 37.31	22.395	25 33 28.2	17.35	06	20 04 13.03	22.580	24 26 24.5	45.43
07	18 17 51.75	22.416	25 35 08.5	16.08	07	20 06 28.47	22.568	24 21 48.1	46.71
08	18 20 06.30	22.435	25 36 41.1	14.80	08	20 08 43.84	22.555	24 17 04.0	47.99
09	18 22 20.97	22.455	25 38 06.1	13.53	09	20 10 59.13	22.541	24 12 12.2	49.28
10	18 24 35.76	22.473	25 39 23.4	12.24	10	20 13 14.33	22.527	24 07 12.7	50.55
11	18 26 50.65	22.491	25 40 33.0	10.95	11	20 15 29.45	22.513	24 02 05.6	51.82
12	18 29 05.65	22.508	25 41 34.8	09.66	12	20 17 44.48	22.498	23 56 50.9	53.08
13	18 31 20.75	22.525	25 42 28.9	08.37	13	20 19 59.42	22.482	23 51 28.6	54.35
14	18 33 35.95	22.541	25 43 15.2	07.08	14	20 22 14.26	22.465	23 45 58.7	55.61
15	18 35 51.24	22.555	25 43 53.8	05.78	15	20 24 29.00	22.448	23 40 21.3	56.87
16	18 38 06.61	22.569	25 44 24.5	04.47	16	20 26 43.64	22.432	23 34 36.3	58.12
17	18 40 22.07	22.584	25 44 47.4	03.17	17	20 28 58.18	22.414	23 28 43.9	59.36
18	18 42 37.62	22.597	25 45 02.5	01.86	18	20 31 12.61	22.396	23 22 44.0	60.61
19	18 44 53.23	22.608	25 45 09.7	00.55	19	20 33 26.93	22.378	23 16 36.6	61.84
20	18 47 08.92	22.620	25 45 09.1	00.76	20	20 35 41.14	22.358	23 10 21.9	63.08
21	18 49 24.67	22.630	25 45 00.6	02.07	21	20 37 55.23	22.339	23 03 59.7	64.30
22	18 51 40.48	22.640	25 44 44.3	03.38	22	20 40 09.21	22.321	22 57 30.3	65.52
23	18 53 56.35	22.650	S. 25 44 20.1	04.70	23	20 42 23.08	22.301	S. 22 50 53.5	66.74
Wednesday 6.					Friday 8.				
00	18 56 12.28	22.658	S. 25 43 47.9	06.02	00	20 44 36.82	22.280	S. 22 44 09.4	67.95
01	18 58 28.25	22.666	25 43 07.9	07.33	01	20 46 50.44	22.260	22 37 18.1	69.16
02	19 00 44.27	22.673	25 42 19.9	08.66	02	20 49 03.94	22.239	22 30 19.5	70.37
03	19 03 00.33	22.679	25 41 24.0	09.98	03	20 51 17.31	22.218	22 23 13.7	71.56
04	19 05 16.42	22.684	25 40 20.2	11.29	04	20 53 30.55	22.197	22 16 00.8	72.74
05	19 07 32.54	22.689	25 39 08.5	12.61	05	20 55 43.67	22.175	22 08 40.8	73.93
06	19 09 48.69	22.693	25 37 48.9	13.93	06	20 57 56.65	22.153	22 01 13.7	75.10
07	19 12 04.86	22.696	25 36 21.3	15.26	07	21 00 09.51	22.132	21 53 39.6	76.28
08	19 14 21.04	22.698	25 34 45.8	16.58	08	21 02 22.23	22.108	21 45 58.4	77.44
09	19 16 37.24	22.701	25 33 02.3	17.91	09	21 04 34.81	22.086	21 38 10.3	78.60
10	19 18 53.45	22.703	25 31 10.9	19.23	10	21 06 47.26	22.064	21 30 15.2	79.76
11	19 21 09.67	22.703	25 29 11.6	20.55	11	21 08 59.58	22.041	21 22 13.2	80.91
12	19 23 25.88	22.702	25 27 04.3	21.88	12	21 11 11.75	22.018	21 14 04.3	82.05
13	19 25 42.09	22.701	25 24 49.1	23.19	13	21 13 23.79	21.995	21 05 48.6	83.18
14	19 27 58.29	22.699	25 22 26.0	24.52	14	21 15 35.69	21.972	20 57 26.1	84.31
15	19 30 14.48	22.697	25 19 54.9	25.83	15	21 17 47.45	21.948	20 48 56.9	85.43
16	19 32 30.65	22.693	25 17 16.0	27.15	16	21 19 59.07	21.924	20 40 21.0	86.53
17	19 34 46.80	22.690	25 14 29.1	28.48	17	21 22 10.54	21.901	20 31 38.5	87.64
18	19 37 02.93	22.685	25 11 34.3	29.79	18	21 24 21.88	21.878	20 22 49.3	88.75
19	19 39 19.02	22.679	25 08 31.6	31.10	19	21 26 33.07	21.854	20 13 53.5	89.85
20	19 41 35.08	22.674	25 05 21.1	32.41	20	21 28 44.13	21.831	20 04 51.1	90.93
21	19 43 51.11	22.668	25 02 02.7	33.73	21	21 30 55.04	21.806	19 55 42.3	92.01
22	19 46 07.09	22.660	24 58 36.4	35.04	22	21 33 05.80	21.783	19 46 27.0	93.08
23	19 48 23.03	22.653	24 55 02.2	36.35	23	21 35 16.43	21.759	19 37 05.3	94.15
24	19 50 38.92	22.644	S. 24 51 20.2	37.65	24	21 37 26.91	21.735	S. 19 27 37.2	95.21

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Saturday 9.					Monday 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	21 37 26.91	21.735	S. 19 27 37.2	95.21	00	23 19 25.87	20.893	S. 10 04 00.1	136.30
01	21 39 37.25	21.712	19 18 02.8	96.26	01	23 21 31.21	20.887	9 50 20.4	136.93
02	21 41 47.45	21.688	19 08 22.1	97.31	02	23 23 36.51	20.881	9 36 36.9	137.56
03	21 43 57.51	21.664	18 58 35.1	98.34	03	23 25 41.78	20.876	9 22 49.7	138.18
04	21 46 07.42	21.641	18 48 42.0	99.37	04	23 27 47.02	20.871	9 08 58.8	138.78
05	21 48 17.20	21.618	18 38 42.7	100.38	05	23 29 52.23	20.867	8 55 04.3	139.37
06	21 50 26.83	21.594	18 28 37.4	101.39	06	23 31 57.42	20.863	8 41 06.4	139.95
07	21 52 36.33	21.572	18 18 26.0	102.41	07	23 34 02.59	20.860	8 27 04.9	140.53
08	21 54 45.69	21.548	18 08 08.5	103.41	08	23 36 07.74	20.858	8 13 00.1	141.08
09	21 56 54.91	21.526	17 57 45.1	104.39	09	23 38 12.89	20.857	7 58 51.9	141.64
10	21 59 04.00	21.503	17 47 15.8	105.37	10	23 40 18.02	20.855	7 44 40.4	142.18
11	22 01 12.95	21.481	17 36 40.7	106.34	11	23 42 23.15	20.855	7 30 25.7	142.71
12	22 03 21.77	21.459	17 25 59.7	107.31	12	23 44 28.28	20.856	7 16 07.9	143.23
13	22 05 30.46	21.437	17 15 13.0	108.27	13	23 46 33.42	20.857	7 01 47.0	143.74
14	22 07 39.01	21.414	17 04 20.5	109.22	14	23 48 38.56	20.858	6 47 23.0	144.25
15	22 09 47.43	21.393	16 53 22.4	110.16	15	23 50 43.72	20.862	6 32 56.0	144.73
16	22 11 55.72	21.372	16 42 18.6	111.09	16	23 52 48.90	20.865	6 18 26.2	145.21
17	22 14 03.89	21.351	16 31 09.3	112.02	17	23 54 54.10	20.869	6 03 53.5	145.68
18	22 16 11.93	21.330	16 19 54.4	112.93	18	23 56 59.33	20.873	5 49 18.1	146.13
19	22 18 19.85	21.310	16 08 34.1	113.83	19	23 59 04.58	20.878	5 34 40.0	146.58
20	22 20 27.65	21.290	15 57 08.4	114.73	20	00 01 09.87	20.885	5 19 59.2	147.01
21	22 22 35.33	21.270	15 45 37.3	115.63	21	00 03 15.20	20.892	5 05 15.9	147.43
22	22 24 42.89	21.250	15 34 00.8	116.52	22	00 05 20.57	20.900	4 50 30.1	147.83
23	22 26 50.33	21.231	S. 15 22 19.1	117.38	23	00 07 26.00	20.908	S. 4 35 41.9	148.23
Sunday 10.					Tuesday 12.				
00	22 28 57.66	21.213	S. 15 10 32.2	118.25	00	00 09 31.47	20.917	S. 4 20 51.3	148.63
01	22 31 04.88	21.194	14 58 40.1	119.11	01	00 11 37.00	20.927	4 05 58.4	149.00
02	22 33 11.99	21.175	14 46 42.9	119.95	02	00 13 42.59	20.938	3 51 03.3	149.36
03	22 35 18.98	21.158	14 34 40.7	120.79	03	00 15 48.25	20.948	3 36 06.1	149.71
04	22 37 25.88	21.141	14 22 33.4	121.63	04	00 17 53.97	20.961	3 21 06.8	150.05
05	22 39 32.67	21.123	14 10 21.1	122.45	05	00 19 59.78	20.974	3 06 05.5	150.38
06	22 41 39.36	21.108	13 58 04.0	123.26	06	00 22 05.66	20.988	2 51 02.2	150.70
07	22 43 45.96	21.091	13 45 42.0	124.07	07	00 24 11.63	21.003	2 35 57.1	151.00
08	22 45 52.45	21.075	13 33 15.2	124.86	08	00 26 17.69	21.018	2 20 50.2	151.28
09	22 47 58.86	21.061	13 20 43.7	125.64	09	00 28 23.84	21.033	2 05 41.7	151.57
10	22 50 05.18	21.046	13 08 07.5	126.42	10	00 30 30.09	21.050	1 50 31.4	151.84
11	22 52 11.41	21.031	12 55 26.7	127.18	11	00 32 36.44	21.068	1 35 19.6	152.09
12	22 54 17.55	21.017	12 42 41.3	127.94	12	00 34 42.90	21.086	1 20 06.3	152.33
13	22 56 23.61	21.004	12 29 51.4	128.69	13	00 36 49.47	21.105	1 04 51.6	152.57
14	22 58 29.60	20.992	12 16 57.0	129.43	14	00 38 56.16	21.126	0 49 35.5	152.78
15	23 00 35.51	20.979	12 03 58.2	130.16	15	00 41 02.98	21.147	0 34 18.2	152.98
16	23 02 41.35	20.968	11 50 55.1	130.88	16	00 43 09.92	21.168	0 18 59.8	153.17
17	23 04 47.12	20.957	11 37 47.6	131.60	17	00 45 16.99	21.190	S. 0 03 40.2	153.35
18	23 06 52.83	20.946	11 24 35.9	132.29	18	00 47 24.20	21.213	N. 0 11 40.4	153.51
19	23 08 58.47	20.936	11 11 20.1	132.98	19	00 49 31.55	21.238	0 27 01.9	153.66
20	23 11 04.06	20.927	10 58 00.1	133.67	20	00 51 39.05	21.263	0 42 24.3	153.79
21	23 13 09.59	20.917	10 44 36.0	134.34	21	00 53 46.70	21.288	0 57 47.4	153.92
22	23 15 15.06	20.908	10 31 08.0	135.00	22	00 55 54.51	21.315	1 13 11.3	154.03
23	23 17 20.49	20.901	10 17 36.0	135.66	23	00 58 02.48	21.342	1 28 35.7	154.12
24	23 19 25.87	20.893	S. 10 04 00.1	136.30	24	01 00 10.61	21.370	N. 1 44 00.7	154.20

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Wednesday 13.					Friday 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	01 00 10.61	21.370	N. 1 44 00.7	154.20	00	02 47 28.71	23.613	N. 13 43 36.9	139.01
01	01 02 18.92	21.399	1 59 26.1	154.27	01	02 49 50.57	23.674	13 57 28.7	138.25
02	01 04 27.40	21.428	2 14 51.9	154.32	02	02 52 12.80	23.737	14 11 15.9	137.47
03	01 06 36.06	21.459	2 30 17.9	154.35	03	02 54 35.41	23.800	14 24 58.4	136.67
04	01 08 44.91	21.490	2 45 44.1	154.38	04	02 56 58.40	23.863	14 38 35.9	135.84
05	01 10 53.94	21.523	3 01 10.4	154.38	05	02 59 21.77	23.927	14 52 08.5	135.01
06	01 13 03.18	21.556	3 16 36.7	154.38	06	03 01 45.52	23.990	15 05 36.0	134.14
07	01 15 12.61	21.589	3 32 02.9	154.35	07	03 04 09.65	24.054	15 18 58.2	133.25
08	01 17 22.25	21.624	3 47 28.9	154.32	08	03 06 34.17	24.118	15 32 15.0	132.35
09	01 19 32.10	21.660	4 02 54.7	154.27	09	03 08 59.07	24.183	15 45 26.4	131.43
10	01 21 42.17	21.696	4 18 20.1	154.19	10	03 11 24.36	24.248	15 58 32.2	130.49
11	01 23 52.45	21.733	4 33 45.0	154.11	11	03 13 50.05	24.313	16 11 32.3	129.53
12	01 26 02.96	21.771	4 49 09.4	154.02	12	03 16 16.12	24.378	16 24 26.5	128.54
13	01 28 13.70	21.809	5 04 33.2	153.90	13	03 18 42.58	24.443	16 37 14.8	127.53
14	01 30 24.67	21.848	5 19 56.2	153.77	14	03 21 09.44	24.509	16 49 56.9	126.51
15	01 32 35.87	21.888	5 35 18.4	153.63	15	03 23 36.69	24.574	17 02 32.9	125.47
16	01 34 47.33	21.930	5 50 39.7	153.47	16	03 26 04.33	24.640	17 15 02.5	124.40
17	01 36 59.03	21.971	6 06 00.0	153.28	17	03 28 32.37	24.706	17 27 25.7	123.32
18	01 39 10.98	22.014	6 21 19.1	153.09	18	03 31 00.80	24.771	17 39 42.4	122.22
19	01 41 23.20	22.058	6 36 37.1	152.88	19	03 33 29.62	24.836	17 51 52.3	121.08
20	01 43 35.67	22.101	6 51 53.7	152.65	20	03 35 58.83	24.902	18 03 55.4	119.93
21	01 45 48.41	22.146	7 07 08.9	152.41	21	03 38 28.44	24.967	18 15 51.5	118.77
22	01 48 01.42	22.192	" 7 22 22.6	152.14	22	03 40 58.43	25.032	18 27 40.6	117.59
23	01 50 14.71	22.238	N. 7 37 34.6	151.87	23	03 43 28.82	25.098	N. 18 39 22.6	116.38
Thursday 14.					Saturday 16.				
00	01 52 28.28	22.285	N. 7 52 45.0	151.58	00	03 45 59.60	25.162	N. 18 50 57.2	115.15
01	01 54 42.13	22.333	8 07 53.5	151.26	01	03 48 30.76	25.226	19 02 24.4	113.91
02	01 56 56.27	22.382	8 23 00.1	150.93	02	03 51 02.31	25.291	19 13 44.1	112.65
03	01 59 10.71	22.431	8 38 04.7	150.58	03	03 53 34.25	25.355	19 24 56.2	111.37
04	02 01 25.44	22.481	8 53 07.1	150.22	04	03 56 06.57	25.418	19 36 00.5	110.05
05	02 03 40.48	22.532	9 08 07.3	149.83	05	03 58 39.27	25.482	19 46 56.8	108.73
06	02 05 55.82	22.583	9 23 05.1	149.43	06	04 01 12.35	25.544	19 57 45.2	107.39
07	02 08 11.47	22.635	9 38 00.4	149.01	07	04 03 45.80	25.606	20 08 25.5	106.03
08	02 10 27.44	22.688	9 52 53.2	148.58	08	04 06 19.62	25.668	20 18 57.5	104.64
09	02 12 43.72	22.741	10 07 43.3	148.12	09	04 08 53.82	25.730	20 29 21.2	103.25
10	02 15 00.33	22.796	10 22 30.6	147.64	10	04 11 28.38	25.790	20 39 36.5	101.83
11	02 17 17.27	22.850	10 37 15.0	147.15	11	04 14 03.30	25.850	20 49 43.2	100.39
12	02 19 34.53	22.905	10 51 56.4	146.64	12	04 16 38.58	25.910	20 59 41.2	98.94
13	02 21 52.13	22.961	11 06 34.7	146.11	13	04 19 14.22	25.968	21 09 30.5	97.47
14	02 24 10.06	23.018	11 21 09.7	145.56	14	04 21 50.20	26.027	21 19 10.8	95.98
15	02 26 28.34	23.075	11 35 41.4	145.00	15	04 24 26.54	26.085	21 28 42.2	94.47
16	02 28 46.96	23.133	11 50 09.7	144.41	16	04 27 03.22	26.141	21 38 04.5	92.94
17	02 31 05.93	23.191	12 04 34.3	143.80	17	04 29 40.23	26.197	21 47 17.5	91.40
18	02 33 25.25	23.249	12 18 55.3	143.18	18	04 32 17.58	26.252	21 56 21.3	89.84
19	02 35 44.92	23.309	12 33 12.4	142.53	19	04 34 55.25	26.305	22 05 15.6	88.27
20	02 38 04.96	23.369	12 47 25.6	141.87	20	04 37 33.24	26.358	22 14 00.5	86.68
21	02 40 25.35	23.428	13 01 34.8	141.18	21	04 40 11.55	26.410	22 22 35.7	85.07
22	02 42 46.10	23.489	13 15 39.8	140.48	22	04 42 50.16	26.461	22 31 01.3	83.44
23	02 45 07.22	23.551	13 29 40.6	139.76	23	04 45 29.08	26.512	22 39 17.0	81.80
24	02 47 28.71	23.613	N. 13 43 36.9	139.01	24	04 48 08.30	26.561	N. 22 47 22.9	80.16

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Sunday 17.					Tuesday 19.				
	h m s		° ' "			h m s		° ' "	
00	04 48 08.30	26.561	N. 22 47 22.9	80.16	00	06 58 26.84	27.071	N. 25 42 29.0	08.88
01	04 50 47.81	26.608	22 55 18.9	78.48	01	07 01 09.17	27.038	25 41 30.1	10.75
02	04 53 27.60	26.654	23 03 04.7	76.79	02	07 03 51.29	27.003	25 40 20.0	12.61
03	04 56 07.66	26.700	23 10 40.4	75.10	03	07 06 33.20	26.966	25 38 58.8	14.45
04	04 58 48.00	26.745	23 18 05.9	73.39	04	07 09 14.88	26.928	25 37 26.6	16.29
05	05 01 28.60	26.788	23 25 21.1	71.67	05	07 11 56.33	26.888	25 35 43.3	18.13
06	05 04 09.45	26.828	23 32 25.9	69.93	06	07 14 37.53	26.846	25 33 49.1	19.94
07	05 06 50.54	26.868	23 39 20.3	68.18	07	07 17 18.48	26.803	25 31 44.0	21.76
08	05 09 31.87	26.908	23 46 04.1	66.42	08	07 19 59.17	26.759	25 29 28.0	23.56
09	05 12 13.43	26.945	23 52 37.3	64.65	09	07 22 39.59	26.713	25 27 01.3	25.35
10	05 14 55.21	26.981	23 58 59.9	62.87	10	07 25 19.72	26.664	25 24 23.8	27.13
11	05 17 37.20	27.015	24 05 11.7	61.06	11	07 27 59.56	26.615	25 21 35.7	28.90
12	05 20 19.39	27.048	24 11 12.6	59.25	12	07 30 39.10	26.564	25 18 37.0	30.66
13	05 23 01.78	27.080	24 17 02.7	57.44	13	07 33 18.33	26.512	25 15 27.8	32.41
14	05 25 44.35	27.110	24 22 41.9	55.62	14	07 35 57.25	26.458	25 12 08.1	34.14
15	05 28 27.10	27.138	24 28 10.1	53.78	15	07 38 35.83	26.403	25 08 38.1	35.86
16	05 31 10.01	27.164	24 33 27.2	51.93	16	07 41 14.09	26.347	25 04 57.8	37.58
17	05 33 53.07	27.189	24 38 33.2	50.07	17	07 43 52.00	26.289	25 01 07.2	39.28
18	05 36 36.28	27.213	24 43 28.0	48.21	18	07 46 29.56	26.230	24 57 06.5	40.95
19	05 39 19.62	27.234	24 48 11.7	46.35	19	07 49 06.76	26.170	24 52 55.8	42.62
20	05 42 03.09	27.255	24 52 44.2	44.48	20	07 51 43.60	26.109	24 48 35.1	44.28
21	05 44 46.68	27.273	24 57 05.4	42.59	21	07 54 20.07	26.048	24 44 04.5	45.92
22	05 47 30.36	27.288	25 01 15.3	40.70	22	07 56 56.17	25.984	24 39 24.1	47.54
23	05 50 14.14	27.304	N. 25 05 13.8	38.81	23	07 59 31.88	25.918	N. 24 34 34.0	49.16
Monday 18.					Wednesday 20.				
00	05 52 58.01	27.317	N. 25 09 01.0	36.92	00	08 02 07.19	25.853	N. 24 29 34.2	50.76
01	05 55 41.95	27.328	25 12 36.8	35.01	01	08 04 42.11	25.786	24 24 24.9	52.33
02	05 58 25.95	27.338	25 16 01.1	33.09	02	08 07 16.62	25.718	24 19 06.2	53.90
03	06 01 10.00	27.345	25 19 13.9	31.18	03	08 09 50.72	25.649	24 13 38.1	55.46
04	06 03 54.09	27.351	25 22 15.3	29.28	04	08 12 24.41	25.580	24 08 00.7	56.99
05	06 06 38.21	27.354	25 25 05.2	27.36	05	08 14 57.68	25.509	24 02 14.2	58.51
06	06 09 22.34	27.356	25 27 43.6	25.44	06	08 17 30.52	25.438	23 56 18.6	60.01
07	06 12 06.48	27.356	25 30 10.5	23.52	07	08 20 02.93	25.366	23 50 14.1	61.50
08	06 14 50.61	27.354	25 32 25.8	21.59	08	08 22 34.91	25.293	23 44 00.6	62.98
09	06 17 34.73	27.351	25 34 29.6	19.68	09	08 25 06.44	25.219	23 37 38.4	64.43
10	06 20 18.82	27.345	25 36 21.9	17.76	10	08 27 37.54	25.145	23 31 07.5	65.87
11	06 23 02.87	27.338	25 38 02.7	15.83	11	08 30 08.18	25.069	23 24 28.0	67.29
12	06 25 46.87	27.328	25 39 31.9	13.91	12	08 32 38.37	24.994	23 17 40.0	68.69
13	06 28 30.81	27.317	25 40 49.6	11.99	13	08 35 08.11	24.918	23 10 43.7	70.08
14	06 31 14.67	27.303	25 41 55.8	10.08	14	08 37 37.38	24.840	23 03 39.1	71.45
15	06 33 58.45	27.289	25 42 50.5	08.16	15	08 40 06.19	24.763	22 56 26.3	72.81
16	06 36 42.14	27.272	25 43 33.7	06.24	16	08 42 34.54	24.686	22 49 05.4	74.14
17	06 39 25.71	27.253	25 44 05.4	04.33	17	08 45 02.42	24.608	22 41 36.6	75.46
18	06 42 09.17	27.233	25 44 25.7	02.43	18	08 47 29.84	24.530	22 33 59.9	76.77
19	06 44 52.51	27.211	25 44 34.6	00.53	19	08 49 56.78	24.451	22 26 15.4	78.05
20	06 47 35.70	27.186	25 44 32.1	01.36	20	08 52 23.25	24.372	22 18 23.3	79.32
21	06 50 18.74	27.159	25 44 18.3	03.24	21	08 54 49.24	24.293	22 10 23.6	80.57
22	06 53 01.61	27.132	25 43 53.2	05.13	22	08 57 14.76	24.213	22 02 16.5	81.79
23	06 55 44.32	27.103	25 43 16.7	07.02	23	08 59 39.79	24.133	21 54 02.1	83.01
24	06 58 26.84	27.071	N. 25 42 29.0	08.88	24	09 02 04.55	24.053	N. 21 45 40.4	84.21

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 21.					Saturday 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	09 02 04.35	24.053	N. 21 45 40.4	84.21	00	10 48 36.69	20.497	N. 13 15 02.3	122.63
01	09 04 28.43	23.973	21 37 11.6	85.39	01	10 50 39.49	20.436	13 02 45.1	123.08
02	09 06 52.03	23.893	21 28 35.7	86.55	02	10 52 41.92	20.376	12 50 25.3	123.51
03	09 09 15.14	23.813	21 19 53.0	87.69	03	10 54 44.00	20.317	12 38 03.0	123.93
04	09 11 37.78	23.733	21 11 03.4	88.83	04	10 56 45.72	20.258	12 25 38.1	124.35
05	09 13 59.93	23.652	21 02 07.1	89.94	05	10 58 47.10	20.201	12 13 10.8	124.75
06	09 16 21.60	23.572	20 53 04.1	91.03	06	11 00 48.13	20.143	12 00 41.1	125.14
07	09 18 42.79	23.492	20 43 54.7	92.11	07	11 02 48.82	20.087	11 48 09.1	125.52
08	09 21 03.50	23.412	20 34 38.8	93.18	08	11 04 49.17	20.031	11 35 34.9	125.88
09	09 23 23.73	23.332	20 25 16.6	94.22	09	11 06 49.19	19.976	11 22 58.6	126.23
10	09 25 43.48	23.251	20 15 48.2	95.24	10	11 08 48.88	19.922	11 10 20.2	126.58
11	09 28 02.74	23.170	20 06 13.7	96.25	11	11 10 48.25	19.868	10 57 39.7	126.91
12	09 30 21.52	23.091	19 56 33.2	97.24	12	11 12 47.30	19.816	10 44 57.3	127.23
13	09 32 39.83	23.011	19 46 46.8	98.22	13	11 14 46.04	19.764	10 32 13.0	127.54
14	09 34 57.65	22.931	19 36 54.6	99.18	14	11 16 44.47	19.713	10 19 26.8	127.84
15	09 37 15.00	22.853	19 26 56.7	100.12	15	11 18 42.59	19.663	10 06 38.9	128.13
16	09 39 31.88	22.774	19 16 53.2	101.04	16	11 20 40.42	19.614	9 53 49.3	128.40
17	09 41 48.29	22.695	19 06 44.2	101.96	17	11 22 37.96	19.565	9 40 58.1	128.67
18	09 44 04.22	22.617	18 56 29.7	102.85	18	11 24 35.20	19.517	9 28 05.3	128.93
19	09 46 19.69	22.539	18 46 10.0	103.73	19	11 26 32.16	19.470	9 15 10.9	129.18
20	09 48 34.69	22.461	18 35 45.0	104.59	20	11 28 28.84	19.423	9 02 15.1	129.42
21	09 50 49.22	22.383	18 25 14.9	105.43	21	11 30 25.24	19.378	8 49 17.9	129.64
22	09 53 03.29	22.308	18 14 39.8	106.26	22	11 32 21.38	19.333	8 36 19.4	129.86
23	09 55 16.91	22.231	N. 18 03 59.8	107.07	23	11 34 17.24	19.289	N. 8 23 19.6	130.07
Friday 22.					Sunday 24.				
00	09 57 30.06	22.154	N. 17 53 15.0	107.86	00	11 36 12.85	19.247	N. 8 10 18.6	130.27
01	09 59 42.76	22.079	17 42 25.5	108.64	01	11 38 08.20	19.204	7 57 16.4	130.46
02	10 01 55.01	22.004	17 31 31.3	109.42	02	11 40 03.30	19.163	7 44 13.1	130.63
03	10 04 06.81	21.929	17 20 32.5	110.17	03	11 41 58.16	19.123	7 31 08.8	130.81
04	10 06 18.16	21.854	17 09 29.3	110.90	04	11 43 52.77	19.082	7 18 03.4	130.98
05	10 08 29.06	21.781	16 58 21.7	111.62	05	11 45 47.14	19.043	7 04 57.1	131.13
06	10 10 39.53	21.708	16 47 09.9	112.33	06	11 47 41.28	19.005	6 51 49.9	131.27
07	10 12 49.56	21.636	16 35 53.8	113.03	07	11 49 35.20	18.968	6 38 41.9	131.40
08	10 14 59.16	21.564	16 24 33.6	113.70	08	11 51 28.89	18.930	6 25 33.1	131.53
09	10 17 08.33	21.493	16 13 09.4	114.36	09	11 53 22.36	18.895	6 12 23.5	131.65
10	10 19 17.07	21.422	16 01 41.3	115.00	10	11 55 15.63	18.860	5 59 13.3	131.76
11	10 21 25.39	21.351	15 50 09.4	115.63	11	11 57 08.68	18.825	5 46 02.4	131.86
12	10 23 33.28	21.281	15 38 33.7	116.26	12	11 59 01.53	18.792	5 32 51.0	131.95
13	10 25 40.76	21.213	15 26 54.3	116.86	13	12 00 54.18	18.759	5 19 39.0	132.04
14	10 27 47.83	21.143	15 15 11.4	117.45	14	12 02 46.64	18.728	5 06 26.5	132.12
15	10 29 54.48	21.076	15 03 24.9	118.03	15	12 04 38.91	18.696	4 53 13.6	132.18
16	10 32 00.74	21.009	14 51 35.1	118.58	16	12 06 30.99	18.666	4 40 00.3	132.24
17	10 34 06.59	20.943	14 39 41.9	119.14	17	12 08 22.90	18.637	4 26 46.7	132.29
18	10 36 12.05	20.877	14 27 45.4	119.68	18	12 10 14.63	18.608	4 13 32.8	132.33
19	10 38 17.11	20.812	14 15 45.7	120.21	19	12 12 06.19	18.579	4 00 18.7	132.38
20	10 40 21.79	20.748	14 03 42.9	120.72	20	12 13 57.58	18.553	3 47 04.3	132.41
21	10 42 26.08	20.683	13 51 37.1	121.21	21	12 15 48.82	18.527	3 33 49.8	132.43
22	10 44 29.99	20.621	13 39 28.4	121.70	22	12 17 39.90	18.500	3 20 35.2	132.43
23	10 46 33.53	20.558	13 27 16.7	122.18	23	12 19 30.82	18.475	3 07 20.6	132.44
24	10 48 36.69	20.497	N. 13 15 02.3	122.63	24	12 21 21.60	18.452	N. 2 54 05.9	132.44

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension in 1911.	Declination.	Var. in 1911.	Hour	Right Ascension in 1911.	Declination.	Var. in 1911.
Monday 25.				Wednesday 27.			
00	12 21 21.8	18.45	N.	00	13 48 35.05	18.16	S.
01	12 23 12.24	18.42		01	13 50 24.09	18.17	
02	12 25 02.74	18.39		02	13 52 13.20	18.19	
03	12 26 53.11	18.34		03	13 54 02.39	18.20	
04	12 28 43.35	18.30		04	13 55 51.65	18.21	
05	12 30 33.46	18.34		05	13 57 40.99	18.23	
06	12 32 23.46	18.34		06	13 59 30.41	18.24	
07	12 34 13.35	18.30		07	14 01 19.93	18.26	
08	12 36 03.12	18.28		08	14 03 09.53	18.27	
09	12 37 52.79	18.27		09	14 04 59.23	18.29	
10	12 39 42.36	18.25		10	14 06 49.03	18.30	
11	12 41 31.83	18.23		11	14 08 38.93	18.32	
12	12 43 21.21	18.22		12	14 10 28.94	18.34	
13	12 45 10.50	18.20	N.	13	14 12 19.06	18.36	
14	12 46 59.72	18.19	S.	14	14 14 09.29	18.38	
15	12 48 48.85	18.18		15	14 15 59.64	18.40	
16	12 50 37.91	18.17		16	14 17 50.10	18.42	
17	12 52 26.90	18.16		17	14 19 40.70	18.44	
18	12 54 15.83	18.15		18	14 21 31.42	18.46	
19	12 56 04.70	18.14		19	14 23 22.27	18.48	
20	12 57 53.51	18.13		20	14 25 13.25	18.50	
21	12 59 42.27	18.12		21	14 27 04.37	18.53	
22	13 01 30.99	18.11		22	14 28 55.64	18.56	
23	13 03 19.60	18.10	S.	23	14 30 47.07	18.58	S.
Tuesday 26.				Thursday 28.			
00	13 05 08.29	18.10	S.	00	14 32 38.60	18.60	S.
01	13 06 56.89	18.09		01	14 34 30.30	18.63	
02	13 08 45.46	18.09		02	14 36 22.16	18.65	
03	13 10 34.01	18.09		03	14 38 14.18	18.68	
04	13 12 22.53	18.08		04	14 40 06.36	18.71	
05	13 14 11.04	18.08		05	14 41 58.70	18.73	
06	13 15 59.53	18.08		06	14 43 51.21	18.76	
07	13 17 48.02	18.08		07	14 45 43.89	18.79	
08	13 19 36.50	18.08		08	14 47 36.75	18.82	
09	13 21 24.98	18.08		09	14 49 29.77	18.85	
10	13 23 13.47	18.08		10	14 51 22.98	18.88	
11	13 25 01.90	18.08		11	14 53 16.37	18.91	
12	13 26 50.47	18.08		12	14 55 09.94	18.94	
13	13 28 39.00	18.08		13	14 57 03.70	18.97	
14	13 30 27.54	18.09		14	14 58 57.65	19.00	
15	13 32 16.11	18.09		15	15 00 51.80	19.04	
16	13 34 04.71	18.10		16	15 02 46.14	19.07	
17	13 35 53.35	18.10		17	15 04 40.68	19.10	
18	13 37 42.02	18.11		18	15 06 35.41	19.13	
19	13 39 30.73	18.12		19	15 08 30.35	19.17	
20	13 41 19.49	18.13		20	15 10 25.50	19.20	
21	13 43 08.29	18.13		21	15 12 20.86	19.24	
22	13 44 57.15	18.14		22	15 14 16.42	19.27	
23	13 46 46.07	18.15		23	15 16 12.20	19.31	
24	13 48 35.05	18.16	S.	24	15 18 08.20	19.35	S.

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Friday 29.					Saturday 30.				
	h m s	s	° ' " "			h m s	s	° ' " "	
00	15 18 08.20	19.351	S. 16 35 41.6	101.04	00	16 05 41.83	20.308	S. 20 17 21.3	82.89
01	15 20 04.41	19.388	16 45 45.9	100.38	01	16 07 43.80	20.350	20 25 36.1	82.04
02	15 22 00.85	19.424	16 55 46.1	99.70	02	16 09 46.03	20.393	20 33 45.8	81.18
03	15 23 57.50	19.461	17 05 42.3	99.03	03	16 11 48.52	20.436	20 41 50.2	80.29
04	15 25 54.38	19.499	17 15 34.4	98.34	04	16 13 51.26	20.478	20 49 49.3	79.41
05	15 27 51.49	19.537	17 25 22.4	97.65	05	16 15 54.25	20.521	20 57 43.1	78.53
06	15 29 48.82	19.575	17 35 06.2	96.94	06	16 17 57.51	20.564	21 05 31.6	77.63
07	15 31 46.39	19.613	17 44 45.7	96.23	07	16 20 01.02	20.606	21 13 14.6	76.71
08	15 33 44.18	19.652	17 54 20.9	95.51	08	16 22 04.78	20.649	21 20 52.1	75.79
09	15 35 42.21	19.692	18 03 51.8	94.78	09	16 24 08.81	20.693	21 28 24.1	74.88
10	15 37 40.48	19.731	18 13 18.3	94.05	10	16 26 13.09	20.735	21 35 50.6	73.94
11	15 39 38.98	19.771	18 22 40.4	93.31	11	16 28 17.63	20.778	21 43 11.4	72.99
12	15 41 37.73	19.812	18 31 58.0	92.55	12	16 30 22.43	20.822	21 50 26.5	72.04
13	15 43 36.72	19.851	18 41 11.0	91.79	13	16 32 27.49	20.864	21 57 35.9	71.08
14	15 45 35.94	19.891	18 50 19.5	91.03	14	16 34 32.80	20.907	22 04 39.5	70.12
15	15 47 35.41	19.933	18 59 23.3	90.25	15	16 36 38.37	20.950	22 11 37.3	69.14
16	15 49 35.13	19.973	19 08 22.5	89.47	16	16 38 44.20	20.993	22 18 29.2	68.16
17	15 51 35.09	20.014	19 17 16.9	88.68	17	16 40 50.28	21.035	22 25 15.2	67.17
18	15 53 35.30	20.056	19 26 06.6	87.88	18	16 42 56.62	21.078	22 31 55.2	66.17
19	15 55 35.76	20.098	19 34 51.4	87.06	19	16 45 03.21	21.119	22 38 29.2	65.16
20	15 57 36.47	20.139	19 43 31.3	86.24	20	16 47 10.05	21.162	22 44 57.1	64.14
21	15 59 37.43	20.182	19 52 06.3	85.43	21	16 49 17.15	21.204	22 51 18.9	63.13
22	16 01 38.65	20.223	20 00 36.4	84.59	22	16 51 24.50	21.245	22 57 34.6	62.09
23	16 03 40.11	20.265	20 09 01.4	83.74	23	16 53 32.09	21.287	23 03 44.0	61.04
24	16 05 41.83	20.308	S. 20 17 21.3	82.89	24	16 55 39.94	21.328	S. 23 09 47.1	59.99

PHASES OF THE MOON.

								h m
June	3	○	Full Moon	..	..	..	..	12 13.5
"	11	☾	Last Quarter	..	..	..	..	05 51.1
"	17	●	New Moon	..	..	..	..	20 42.1
"	24	☾	First Quarter	..	..	..	..	22 47.4
								h
June	1	☾	Apogee	..	..	..	..	08.1
"	16	☾	Perigee	..	..	..	..	13.9
"	28	☾	Apogee	..	..	..	..	19.7

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semi-diameter passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Var. in 1 hour.
		Apparent Right Ascension.	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.			
		h m s	s	° ' "	"	h m s	m s	s
Sun.	1	06 40 48.20	10.338	N. 23 07 04.4	10.08	1 08.73	3 37.96	0.480
Mon.	2	06 41 56.17	10.326	23 02 50.3	11.09	1 08.69	3 49.33	0.468
Tues.	3	06 49 03.86	10.314	22 58 12.2	12.09	1 08.65	4 00.43	0.456
Wed.	4	06 53 11.25	10.302	22 53 10.1	13.09	1 08.61	4 11.24	0.444
Thur.	5	06 57 18.33	10.288	22 47 44.1	14.08	1 08.56	4 21.73	0.431
Frid.	6	07 01 25.08	10.274	22 41 54.3	15.07	1 08.51	4 31.90	0.417
Sat.	7	07 05 31.49	10.260	22 35 41.0	16.05	1 08.46	4 41.72	0.402
Sun.	8	07 09 37.54	10.244	22 29 04.1	17.02	1 08.41	4 51.19	0.387
Mon.	9	07 13 43.22	10.228	22 22 04.0	17.99	1 08.35	5 00.28	0.371
Tues.	10	07 17 48.50	10.212	22 14 40.7	18.95	1 08.29	5 08.99	0.354
Wed.	11	07 21 53.38	10.195	22 06 54.4	19.91	1 08.23	5 17.29	0.337
Thur.	12	07 25 57.84	10.177	21 58 45.3	20.85	1 08.17	5 25.10	0.319
Frid.	13	07 29 01.53	10.159	21 50 13.5	21.79	1 08.10	5 32.60	0.301
Sat.	14	07 32 05.41	10.139	21 41 19.3	22.73	1 08.03	5 39.56	0.281
Sun.	15	07 35 08.50	10.118	21 32 02.8	23.65	1 07.96	5 46.50	0.261
Mon.	16	07 42 11.09	10.097	21 22 24.2	24.56	1 07.89	5 52.11	0.240
Tues.	17	07 46 13.17	10.076	21 12 23.8	25.45	1 07.82	5 57.02	0.219
Wed.	18	07 50 14.72	10.053	21 02 01.5	26.36	1 07.74	6 02.59	0.196
Thur.	19	07 54 15.72	10.029	20 51 18.5	27.25	1 07.67	6 07.43	0.173
Frid.	20	07 58 16.16	10.004	20 40 14.0	28.12	1 07.59	6 12.00	0.150
Sat.	21	08 02 16.54	9.978	20 28 48.7	28.99	1 07.51	6 16.21	0.126
Sun.	22	08 06 15.33	9.951	20 17 02.7	29.84	1 07.43	6 20.04	0.101
Mon.	23	08 10 14.12	9.923	20 04 56.4	30.68	1 07.35	6 23.57	0.076
Tues.	24	08 14 12.12	9.895	19 52 30.0	31.51	1 07.27	6 27.01	0.051
Wed.	25	08 18 10.01	9.867	19 39 43.8	32.33	1 07.18	6 30.54	0.026
Thur.	26	08 22 06.50	9.837	19 26 38.1	33.14	1 07.10	6 34.57	0.001
Frid.	27	08 26 02.77	9.806	19 13 13.0	33.94	1 07.01	6 38.58	0.025
Sat.	28	08 29 58.42	9.774	18 59 29.0	34.73	1 06.93	6 42.68	0.050
Sun.	29	08 33 53.46	9.740	18 45 26.2	35.50	1 06.84	6 46.17	0.076
Mon.	30	08 37 47.88	9.705	18 31 05.0	36.26	1 06.75	6 49.04	0.101
Tues.	31	08 41 41.69	9.670	18 16 25.7	37.01	1 06.67	6 52.30	0.127
Wed.	32	08 45 34.88	9.634	N. 18 01 28.4	37.75	1 06.58	6 55.95	0.152

*Mean Time of the Semidiameter passing may be found by subtracting 0.18 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.		
		h m s	° ' "	' "	m s	h m s
Sun.	1	06 40 47.57	N. 23 07 05.0	15 45.38	3 37.93	06 37 09.65
Mon.	2	06 44 55.51	23 02 51.0	15 45.38	3 49.30	06 41 06.21
Tues.	3	06 49 03.17	22 58 13.0	15 45.37	4 00.40	06 45 02.76
Wed.	4	06 53 10.53	22 53 11.0	15 45.37	4 11.21	06 48 59.32
Thur.	5	06 57 17.58	22 47 45.1	15 45.37	4 21.70	06 52 55.88
Frid.	6	07 01 24.31	22 41 55.5	15 45.38	4 31.87	06 56 52.44
Sat.	7	07 05 30.69	22 35 42.2	15 45.39	4 41.69	07 00 49.00
Sun.	8	07 09 36.71	22 29 05.5	15 45.40	4 51.16	07 04 45.55
Mon.	9	07 13 42.36	22 22 05.5	15 45.41	5 00.25	07 08 42.11
Tues.	10	07 17 47.63	22 14 42.3	15 45.43	5 08.96	07 12 38.67
Wed.	11	07 21 52.48	22 06 56.2	15 45.46	5 17.26	07 16 35.23
Thur.	12	07 25 56.92	21 58 47.2	15 45.49	5 25.14	07 20 31.78
Frid.	13	07 30 00.92	21 50 15.5	15 45.52	5 32.58	07 24 28.34
Sat.	14	07 34 04.46	21 41 21.4	15 45.56	5 39.56	07 28 24.90
Sun.	15	07 38 07.53	21 32 05.0	15 45.61	5 46.07	07 32 21.46
Mon.	16	07 42 10.10	21 22 26.6	15 45.66	5 52.09	07 36 18.01
Tues.	17	07 46 12.16	21 12 26.4	15 45.72	5 57.59	07 40 14.57
Wed.	18	07 50 13.70	21 02 04.5	15 45.78	6 02.57	07 44 11.13
Thur.	19	07 54 14.70	20 51 21.3	15 45.85	6 07.01	07 48 07.68
Frid.	20	07 58 15.13	20 40 16.9	15 45.92	6 10.89	07 52 04.24
Sat.	21	08 02 15.00	20 28 51.7	15 46.00	6 14.20	07 56 00.80
Sun.	22	08 06 14.28	20 17 05.8	15 46.08	6 16.93	07 59 57.36
Mon.	23	08 10 12.98	20 04 59.6	15 46.17	6 19.06	08 03 53.91
Tues.	24	08 14 11.07	19 52 33.3	15 46.27	6 20.60	08 07 50.47
Wed.	25	08 18 08.56	19 39 47.2	15 46.37	6 21.54	08 11 47.03
Thur.	26	08 22 05.45	19 26 41.6	15 46.47	6 21.87	08 15 43.58
Frid.	27	08 26 01.72	19 13 16.6	15 46.57	6 21.58	08 19 40.14
Sat.	28	08 29 57.38	18 59 32.7	15 46.68	6 20.69	08 23 36.70
Sun.	29	08 33 52.43	18 45 30.0	15 46.79	6 19.18	08 27 33.25
Mon.	30	08 37 46.86	18 31 08.8	15 46.91	6 17.05	08 31 29.81
Tues.	31	08 41 40.68	18 16 29.5	15 47.03	6 14.31	08 35 26.36
Wed.	32	08 45 33.88	N. 18 01 32.3	15 47.15	6 10.96	08 39 22.92

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
	12h.	12h.	12h.		oh.	12h.	oh.	12h.
	° "	"		h m s	' "	' "	' "	' "
1	99 22 17.7	S. 0.28	0.0071968	05 23 55.42	14 49.27	14 51.48	54 23.73	54 31.82
2	100 19 28.3	0.40	0.0072004	05 19 59.51	14 54.01	14 56.84	54 41.13	54 51.51
3	101 16 38.9	0.51	0.0072026	05 16 03.59	14 59.92	15 03.22	55 02.82	55 14.94
4	102 13 49.5	0.60	0.0072032	05 12 07.68	15 06.72	15 10.38	55 27.77	55 41.20
5	103 11 00.2	0.67	0.0072024	05 08 11.77	15 14.19	15 18.12	55 55.18	56 09.64
6	104 08 11.1	0.71	0.0072000	05 04 15.86	15 22.18	15 26.35	56 24.53	56 39.82
7	105 05 22.2	0.72	0.0071961	05 00 19.95	15 30.61	15 34.97	56 55.47	57 11.45
8	106 02 33.7	0.70	0.0071904	04 56 24.03	15 39.39	15 43.88	57 27.70	57 44.18
9	106 59 45.6	0.64	0.0071830	04 52 28.12	15 48.41	15 52.94	58 00.79	58 17.42
10	107 56 57.9	0.56	0.0071737	04 48 32.21	15 57.43	16 01.83	58 33.91	58 50.06
11	108 54 10.8	0.45	0.0071623	04 44 36.30	16 06.08	16 10.09	59 05.65	59 20.38
12	109 51 24.2	0.32	0.0071488	04 40 40.39	16 13.79	16 17.06	59 33.94	59 45.97
13	110 48 38.1	0.18	0.0071329	04 36 44.48	16 19.83	16 21.98	59 56.11	60 04.00
14	111 45 52.7	S. 0.04	0.0071146	04 32 48.56	16 23.41	16 24.06	60 09.28	60 11.65
15	112 43 07.7	N. 0.10	0.0070937	04 28 52.65	16 23.85	16 22.74	60 10.88	60 06.81
16	113 40 23.2	0.23	0.0070702	04 24 56.74	16 20.72	16 17.80	59 59.38	59 48.67
17	114 37 39.2	0.34	0.0070441	04 21 00.83	16 14.03	16 09.48	59 34.82	59 18.12
18	115 34 55.6	0.43	0.0070153	04 17 04.92	16 04.25	15 58.46	58 58.93	58 37.68
19	116 32 12.4	0.48	0.0069839	04 13 09.01	15 52.24	15 45.74	58 14.87	57 51.00
20	117 29 29.5	0.50	0.0069499	04 09 13.10	15 39.09	15 32.44	57 26.60	57 02.19
21	118 26 46.9	0.50	0.0069135	04 05 17.19	15 25.91	15 19.63	56 38.23	56 15.17
22	119 24 04.7	0.47	0.0068749	04 01 21.27	15 13.70	15 08.21	55 53.39	55 33.24
23	120 21 22.8	0.40	0.0068340	03 57 25.36	15 03.24	14 58.85	55 15.00	54 53.89
24	121 18 41.2	0.32	0.0067911	03 53 29.45	14 55.09	14 52.00	54 45.09	54 33.73
25	122 16 00.1	0.22	0.0067463	03 49 33.54	14 49.59	14 47.87	54 24.88	54 18.59
26	123 13 19.4	0.12	0.0066996	03 45 37.63	14 46.85	14 46.51	54 14.83	54 13.59
27	124 10 39.1	N. 0.01	0.0066511	03 41 41.72	14 46.83	14 47.79	54 14.78	54 18.29
28	125 07 59.4	S. 0.12	0.0066010	03 37 45.81	14 49.35	14 51.46	54 24.01	54 31.76
29	126 05 20.3	0.23	0.0065494	03 33 49.90	14 54.07	14 57.14	54 41.36	54 52.61
30	127 02 41.7	0.34	0.0064964	03 29 53.99	15 00.59	15 04.37	55 05.29	55 19.15
31	128 00 04.0	0.43	0.0064420	03 25 58.08	15 08.41	15 12.64	55 33.97	55 49.50
32	128 57 27.0	S. 0.50	0.0063863	03 22 02.17	15 17.00	15 21.41	56 05.49	56 21.71

MEAN TIME.

Day of the Month.	THE MOON'S						
	Longitude.		Latitude.		Age.	Meridian Passage.	
	oh.	12h.	oh.	12h.	oh.	Upper.	Lower.
	c / "	c / "	o / "	o / "	d	h m	h m
1	255 14 35.2	261 14 23.4	S. 0 32 03.0	S. 1 04 32.1	13.14	23 07.0	10 41.8
2	267 16 27.2	273 21 02.3	1 36 28.1	2 07 29.8	14.14	23 58.9	11 32.8
3	279 28 21.9	285 38 36.6	2 37 15.3	3 05 22.7	15.14	* *	12 25.3
4	291 51 55.0	298 08 23.5	3 31 30.3	3 55 16.8	16.14	00 51.8	13 18.1
5	304 28 07.2	310 51 09.4	4 16 21.4	4 34 24.9	17.14	01 44.3	14 10.1
6	317 17 32.5	323 47 18.1	4 49 09.0	5 00 17.7	18.14	02 35.6	15 00.5
7	330 20 27.2	336 57 00.6	5 07 37.0	5 10 55.4	19.14	03 25.1	15 49.2
8	343 36 59.2	350 20 23.2	5 10 04.3	5 04 58.0	20.14	04 13.0	16 36.5
9	357 07 13.5	3 57 30.3	4 55 34.4	4 41 54.9	21.14	05 00.0	17 23.5
10	10 51 13.2	17 48 20.8	4 24 04.7	4 02 13.2	22.14	05 47.2	18 11.2
11	24 48 50.0	31 52 35.6	3 36 34.2	3 07 26.0	23.14	06 35.8	19 00.9
12	38 59 29.0	46 09 18.0	2 35 11.6	2 00 18.4	24.14	07 26.9	19 53.8
13	53 21 45.6	60 36 30.2	1 23 18.2	S. 0 44 47.2	25.14	08 21.7	20 50.6
14	67 53 04.3	75 10 55.1	S. 0 05 24.2	N. 0 34 09.0	26.14	09 20.5	21 51.2
15	82 29 24.5	89 47 50.0	N. 1 13 09.7	1 50 55.4	27.14	10 22.6	22 54.4
16	97 05 25.4	104 21 22.7	2 26 45.0	3 00 00.8	28.14	11 26.0	23 57.4
17	111 34 53.3	118 45 10.2	3 30 09.2	* 3 56 42.1	29.14	12 28.0	* *
18	125 51 29.6	132 53 12.6	4 19 17.8	4 37 40.8	0.81	13 26.1	00 57.6
19	139 49 46.7	146 40 47.0	4 51 42.2	5 01 19.0	1.81	14 19.4	01 53.3
20	153 25 56.7	160 05 07.0	5 06 33.7	5 07 33.0	2.81	15 08.3	02 44.4
21	166 38 17.8	173 05 36.5	5 04 27.7	4 57 30.9	3.81	15 53.4	03 31.2
22	179 27 17.6	185 43 41.9	4 46 57.9	4 33 04.9	4.81	16 36.1	04 15.0
23	191 55 15.5	198 02 29.0	4 16 09.1	3 56 27.8	5.81	17 17.5	04 56.9
24	204 05 56.2	210 06 13.5	3 34 18.0	3 09 56.9	6.81	17 58.7	05 38.0
25	216 03 59.5	221 59 53.4	2 43 41.2	2 15 47.5	7.81	18 40.8	06 19.6
26	227 54 34.8	233 48 43.3	1 46 32.0	1 16 11.5	8.81	19 24.7	07 02.5
27	239 42 57.5	245 37 54.7	N. 0 45 02.3	N. 0 13 21.7	9.81	20 11.0	07 47.5
28	251 34 10.4	257 32 17.6	S. 0 18 33.0	S. 0 50 23.5	10.81	20 59.9	08 35.1
29	263 32 46.9	269 36 05.3	1 21 50.7	1 52 34.8	11.81	21 51.3	09 25.3
30	275 42 36.5	281 52 39.8	2 22 15.1	2 50 30.3	12.81	22 44.2	10 17.6
31	288 06 30.7	294 24 19.8	3 16 58.4	3 41 17.4	13.81	23 37.6	11 10.9
32	300 46 13.2	307 12 12.4	S. 4 03 05.2	S. 4 22 00.4	14.81	* *	12 04.0

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension	Var. in 10 ^m	Declination	Var. in 10 ^m	Hour	Right Ascension	Var. in 10 ^m	Declination	Var. in 10 ^m
Sunday 1.					Tuesday 3.				
00	16 55 33.64	21.328	S. 23 09 47.1	59.00	00	18 42 03.61	22.787	S. 25 43 30.3	01.78
01	16 57 36.33	21.360	23 15 43.9	58.94	01	18 44 20.37	22.801	25 43 37.0	00.46
02	16 59 39.03	21.391	23 21 34.4	57.88	02	18 46 37.22	22.815	25 43 35.8	00.88
03	17 02 41.73	21.422	23 27 18.3	56.81	03	18 48 54.15	22.828	25 43 26.5	02.22
04	17 04 44.43	21.452	23 32 36.1	55.73	04	18 51 11.15	22.838	25 43 09.2	03.56
05	17 06 47.13	21.481	23 36 27.2	54.63	05	18 53 28.21	22.850	25 42 43.8	04.90
06	17 08 50.83	21.511	23 43 51.7	53.52	06	18 55 45.35	22.861	25 42 10.4	06.23
07	17 10 54.53	21.541	23 49 09.7	52.44	07	18 58 02.54	22.869	25 41 29.0	07.58
08	17 12 58.23	21.570	23 54 21.0	51.33	08	19 00 19.78	22.878	25 40 39.5	08.93
09	17 15 01.93	21.600	23 59 25.7	50.22	09	19 02 37.08	22.887	25 39 41.9	10.27
10	17 17 05.63	21.629	24 04 23.6	49.08	10	19 04 54.42	22.895	25 38 36.3	11.62
11	17 19 09.33	21.658	24 09 14.7	47.92	11	19 07 11.80	22.903	25 37 22.5	12.97
12	17 21 13.03	21.687	24 13 59.0	46.75	12	19 09 29.21	22.909	25 36 00.7	14.31
13	17 23 16.73	21.716	24 18 36.5	45.57	13	19 11 46.66	22.916	25 34 30.8	15.67
14	17 25 20.43	21.745	24 23 07.0	44.38	14	19 14 04.12	22.923	25 32 52.7	17.02
15	17 27 24.13	21.774	24 27 30.6	43.18	15	19 16 21.61	22.929	25 31 06.6	18.37
16	17 29 27.83	21.803	24 31 47.2	41.98	16	19 18 39.11	22.935	25 29 12.3	19.72
17	17 31 31.53	21.832	24 35 56.8	40.77	17	19 20 56.62	22.941	25 27 10.0	21.06
18	17 33 35.23	21.861	24 39 59.3	39.55	18	19 23 14.14	22.947	25 24 59.6	22.41
19	17 35 38.93	21.890	24 43 54.7	38.32	19	19 25 31.65	22.953	25 22 41.1	23.76
20	17 37 42.63	21.919	24 47 42.9	37.09	20	19 27 49.17	22.959	25 20 14.5	25.11
21	17 39 46.33	21.948	24 51 24.0	35.85	21	19 30 06.67	22.965	25 17 39.8	26.46
22	17 41 50.03	21.977	24 54 57.8	34.60	22	19 32 24.16	22.971	25 14 57.0	27.81
23	17 43 53.73	22.006	24 58 24.4	33.34	23	19 34 41.63	22.977	25 12 11.1	29.15
Monday 2.					Wednesday 4.				
00	17 45 57.43	22.035	25 01 43.6	32.09	00	19 36 59.08	22.983	25 9 27.2	30.49
01	17 48 01.13	22.064	25 04 55.5	31.37	01	19 39 16.50	22.989	25 6 02.2	31.83
02	17 50 04.83	22.093	25 08 00.0	30.64	02	19 41 33.80	22.995	25 22 43.2	33.18
03	17 52 08.53	22.122	25 10 57.2	29.90	03	19 43 51.24	22.999	25 19 22.1	34.51
04	17 54 12.23	22.151	25 13 46.8	29.15	04	19 46 08.54	22.999	25 15 51.1	35.84
05	17 56 15.93	22.180	25 16 29.0	28.41	05	19 48 25.80	22.999	25 12 12.2	37.18
06	17 58 19.63	22.209	25 19 03.7	27.66	06	19 50 43.02	22.999	25 8 24.0	38.51
07	18 00 23.33	22.238	25 21 30.8	26.90	07	19 53 00.17	22.999	25 44 29.0	39.83
08	18 02 27.03	22.267	25 23 50.4	26.13	08	19 55 17.27	22.999	25 40 23.0	41.17
09	18 04 30.73	22.296	25 26 02.4	25.36	09	19 57 34.31	22.999	25 36 15.0	42.49
10	18 06 34.43	22.325	25 28 06.7	24.58	10	19 59 51.27	22.999	25 32 05.0	43.81
11	18 08 38.13	22.354	25 30 03.3	23.80	11	20 02 08.17	22.999	25 27 50.2	45.13
12	18 10 41.83	22.383	25 31 52.3	23.02	12	20 04 24.99	22.999	25 23 33.2	46.44
13	18 12 45.53	22.412	25 33 33.3	22.23	13	20 06 41.73	22.999	25 19 12.0	47.75
14	18 14 49.23	22.441	25 35 07.0	21.43	14	20 08 58.30	22.999	25 14 52.5	49.05
15	18 16 52.93	22.470	25 36 32.7	20.63	15	20 11 14.06	22.999	25 10 24.3	50.35
16	18 18 56.63	22.499	25 37 50.0	19.83	16	20 13 31.43	22.999	25 5 51.8	51.65
17	18 20 60.33	22.528	25 39 00.7	19.03	17	20 15 47.81	22.999	25 1 14.5	52.95
18	18 22 64.03	22.557	25 40 02.9	18.23	18	20 18 04.10	22.999	25 52 43.1	54.25
19	18 24 67.73	22.586	25 40 57.2	17.43	19	20 20 20.28	22.999	25 47 12.8	55.55
20	18 26 71.43	22.615	25 41 43.7	16.63	20	20 22 36.35	22.999	25 41 30.0	56.85
21	18 28 75.13	22.644	25 42 22.3	15.83	21	20 24 52.32	22.999	25 35 52.3	58.15
22	18 30 78.83	22.673	25 42 52.9	15.03	22	20 27 08.17	22.999	25 30 20.1	59.45
23	18 32 82.53	22.702	25 43 15.6	14.23	23	20 29 23.91	22.999	25 24 00.2	60.75
24	18 34 86.23	22.731	S. 25 43 30.3	01.78	24	20 31 39.53	22.999	S. 23 17 52.8	01.50

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 5.					Saturday 7.				
	h m s		° ' "			h m s		° ' "	
00	20 51 59.53	22.593	S. 23 17 52.8	61.86	00	22 17 11.32	21.333	S. 16 08 50.9	113.83
01	20 55 55.03	22.573	23 11 37.9	63.12	01	22 19 19.24	21.307	15 57 25.3	114.70
02	20 56 10.40	22.551	23 05 15.4	64.37	02	22 21 27.00	21.280	15 45 54.5	115.57
03	20 58 25.64	22.529	22 58 45.5	65.61	03	22 23 34.60	21.255	15 34 18.5	116.42
04	20 40 40.75	22.508	22 52 08.1	66.85	04	22 25 42.06	21.230	15 22 37.5	117.26
05	20 42 55.73	22.486	22 45 23.3	68.08	05	22 27 49.36	21.204	15 10 51.4	118.09
06	20 45 10.58	22.463	22 38 31.2	69.29	06	22 29 56.51	21.180	14 59 00.4	118.91
07	20 47 25.28	22.439	22 31 31.8	70.52	07	22 32 03.52	21.156	14 47 04.5	119.73
08	20 49 39.85	22.416	22 24 25.0	71.73	08	22 34 10.38	21.133	14 35 03.7	120.53
09	20 51 54.27	22.392	22 17 11.1	72.93	09	22 36 17.11	21.109	14 22 58.1	121.33
10	20 54 08.55	22.368	22 09 49.9	74.13	10	22 38 23.69	21.085	14 10 47.8	122.11
11	20 56 22.68	22.343	22 02 21.5	75.33	11	22 40 30.13	21.063	13 58 32.8	122.88
12	20 58 36.66	22.318	21 54 46.0	76.51	12	22 42 36.44	21.041	13 46 13.2	123.65
13	21 00 50.49	22.292	21 47 03.4	77.68	13	22 44 42.62	21.018	13 33 49.0	124.40
14	21 03 04.16	22.267	21 39 13.8	78.85	14	22 46 48.66	20.997	13 21 20.4	125.14
15	21 05 17.69	22.241	21 31 17.2	80.02	15	22 48 54.58	20.976	13 08 47.3	125.88
16	21 07 31.05	22.214	21 23 13.6	81.18	16	22 51 00.37	20.955	12 56 09.8	126.61
17	21 09 44.26	22.188	21 15 03.1	82.33	17	22 53 06.04	20.934	12 43 28.0	127.32
18	21 11 57.30	22.161	21 06 45.7	83.47	18	22 55 11.58	20.914	12 30 42.0	128.02
19	21 14 10.19	22.135	20 58 21.5	84.60	19	22 57 17.01	20.896	12 17 51.8	128.72
20	21 16 22.92	22.108	20 49 50.5	85.73	20	22 59 22.33	20.877	12 04 57.4	129.40
21	21 18 35.48	22.079	20 41 12.7	86.85	21	23 01 27.53	20.858	11 51 59.0	130.07
22	21 20 47.87	22.052	20 32 28.3	87.95	22	23 03 32.62	20.839	11 38 56.6	130.73
23	21 23 00.10	22.024	S. 20 23 37.3	89.06	23	23 05 37.61	20.823	S. 11 25 50.2	131.39
Friday 6.					Sunday 8.				
00	21 25 12.16	21.997	S. 20 14 39.6	90.16	00	23 07 42.50	20.806	S. 11 12 39.9	132.03
01	21 27 24.06	21.969	20 05 35.4	91.24	01	23 09 47.28	20.789	10 59 25.8	132.66
02	21 29 35.79	21.941	19 56 24.7	92.32	02	23 11 51.97	20.774	10 46 08.0	133.28
03	21 31 47.35	21.913	19 47 07.6	93.38	03	23 13 56.57	20.758	10 32 46.4	133.90
04	21 33 58.74	21.884	19 37 44.1	94.45	04	23 16 01.07	20.743	10 19 21.2	134.50
05	21 36 09.96	21.857	19 28 14.2	95.51	05	23 18 05.49	20.729	10 05 52.4	135.08
06	21 38 21.02	21.828	19 18 38.0	96.55	06	23 20 09.82	20.715	9 52 20.2	135.67
07	21 40 31.90	21.799	19 08 55.6	97.58	07	23 22 14.07	20.700	9 38 54.4	136.24
08	21 42 42.61	21.772	18 59 07.0	98.62	08	23 24 18.25	20.690	9 25 05.3	136.79
09	21 44 53.16	21.743	18 49 12.2	99.63	09	23 26 22.35	20.678	9 11 22.9	137.34
10	21 47 03.53	21.715	18 39 11.4	100.63	10	23 28 26.39	20.667	8 57 37.2	137.88
11	21 49 13.74	21.688	18 29 04.6	101.64	11	23 30 30.35	20.656	8 43 48.3	138.41
12	21 51 23.78	21.659	18 18 51.7	102.64	12	23 32 34.26	20.647	8 29 56.3	138.93
13	21 53 33.65	21.631	18 08 32.9	103.62	13	23 34 38.11	20.638	8 16 01.2	139.43
14	21 55 43.35	21.603	17 58 08.3	104.59	14	23 36 41.91	20.628	8 02 03.1	139.93
15	21 57 52.89	21.576	17 47 37.8	105.56	15	23 38 45.65	20.620	7 48 02.1	140.41
16	22 00 02.26	21.548	17 37 01.6	106.52	16	23 40 49.35	20.613	7 33 58.2	140.88
17	22 02 11.46	21.520	17 26 19.6	107.46	17	23 42 53.00	20.605	7 19 51.5	141.35
18	22 04 20.50	21.493	17 15 52.1	108.39	18	23 44 56.61	20.599	7 05 42.0	141.81
19	22 06 29.38	21.466	17 04 38.9	109.33	19	23 47 00.19	20.594	6 51 29.8	142.24
20	22 08 38.09	21.438	16 53 40.1	110.25	20	23 49 03.74	20.589	6 37 15.1	142.67
21	22 10 46.64	21.411	16 42 35.9	111.15	21	23 51 07.26	20.585	6 22 57.8	143.09
22	22 12 55.02	21.384	16 31 26.3	112.06	22	23 53 10.76	20.582	6 08 38.0	143.50
23	22 15 03.25	21.358	16 20 11.2	112.95	23	23 55 14.24	20.578	5 54 15.8	143.90
24	22 17 11.32	21.333	S. 16 08 50.9	113.83	24	23 57 17.70	20.577	S. 5 39 51.2	144.29

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Monday 9.					Wednesday 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	23 57 17.70	20.577	S. 5 39 51.2	144.29	00	01 37 15.57	21.379	N. 6 15 10.3	148.88
01	23 59 21.16	20.575	5 25 24.3	144.67	01	01 39 23.95	21.415	6 30 02.9	148.66
02	00 01 24.60	20.574	5 10 55.2	145.03	02	01 41 32.55	21.453	6 44 54.2	148.43
03	00 03 28.05	20.575	4 56 24.0	145.38	03	01 43 41.38	21.491	6 59 44.0	148.18
04	00 05 31.50	20.576	4 41 30.7	145.72	04	01 45 50.44	21.529	7 14 32.3	147.91
05	00 07 34.96	20.577	4 27 15.4	146.05	05	01 47 59.73	21.568	7 29 18.9	147.63
06	00 09 38.42	20.579	4 12 38.1	146.38	06	01 50 09.26	21.609	7 44 03.8	147.33
07	00 11 41.91	20.583	3 57 58.9	146.68	07	01 52 19.04	21.650	7 58 46.8	147.02
08	00 13 45.41	20.586	3 43 17.9	146.98	08	01 54 29.06	21.692	8 13 28.0	146.69
09	00 15 48.94	20.590	3 28 35.2	147.27	09	01 56 39.34	21.734	8 28 07.1	146.35
10	00 17 52.49	20.595	3 13 50.7	147.54	10	01 58 49.87	21.778	8 42 44.2	146.00
11	00 19 56.08	20.602	2 59 04.7	147.80	11	02 01 00.67	21.822	8 57 19.1	145.63
12	00 21 59.71	20.608	2 44 17.1	148.05	12	02 03 11.73	21.866	9 11 51.7	145.24
13	00 24 03.38	20.616	2 29 28.1	148.29	13	02 05 23.06	21.912	9 26 22.0	144.84
14	00 26 07.10	20.624	2 14 37.6	148.52	14	02 07 34.67	21.958	9 40 49.8	144.43
15	00 28 10.87	20.633	1 59 45.8	148.73	15	02 09 46.55	22.005	9 55 15.1	143.99
16	00 30 14.69	20.643	1 44 52.8	148.94	16	02 11 58.73	22.053	10 09 37.7	143.54
17	00 32 18.58	20.654	1 29 58.5	149.14	17	02 14 11.19	22.101	10 23 57.6	143.08
18	00 34 22.54	20.665	1 15 03.1	149.34	18	02 16 23.94	22.150	10 38 14.7	142.60
19	00 36 26.56	20.677	1 00 06.7	149.58	19	02 18 36.99	22.200	10 52 28.8	142.10
20	00 38 30.66	20.690	0 45 09.3	149.64	20	02 20 50.34	22.250	11 06 39.9	141.59
21	00 40 34.84	20.704	0 30 11.0	149.78	21	02 23 03.99	22.301	11 20 47.9	141.07
22	00 42 39.11	20.718	0 15 11.9	149.92	22	02 25 17.95	22.353	11 34 52.7	140.53
23	00 44 43.46	20.733	0 00 12.0	150.04	23	02 27 32.23	22.406	N. 11 48 54.2	140.97
Tuesday 10.					Thursday 12.				
00	00 46 47.91	20.750	N. 0 14 48.6	150.15	00	02 29 46.82	22.458	N. 12 02 52.3	139.39
01	00 48 52.46	20.767	0 29 49.8	150.24	01	02 32 01.73	22.513	12 16 46.9	138.79
02	00 50 57.11	20.784	0 44 51.5	150.33	02	02 34 16.97	22.567	12 30 37.8	138.18
03	00 53 01.87	20.801	0 59 53.7	150.40	03	02 36 32.53	22.622	12 44 25.1	137.50
04	00 55 06.75	20.823	1 14 56.3	150.46	04	02 38 48.43	22.678	12 58 08.5	136.91
05	00 57 11.74	20.842	1 29 59.2	150.52	05	02 41 04.66	22.733	13 11 48.0	136.25
06	00 59 16.85	20.863	1 45 02.3	150.58	06	02 43 21.23	22.789	13 25 23.5	135.69
07	01 01 22.10	20.886	2 00 05.6	150.59	07	02 45 38.13	22.847	13 38 54.9	135.15
08	01 03 27.48	20.908	2 15 09.0	150.57	08	02 47 55.39	22.905	13 52 22.1	134.17
09	01 05 32.99	20.931	2 30 12.4	150.56	09	02 50 12.99	22.963	14 05 44.9	133.41
10	01 07 38.65	20.955	2 45 15.7	150.53	10	02 52 30.94	23.021	14 19 03.3	132.60
11	01 09 44.45	20.980	3 00 18.8	150.51	11	02 54 49.24	23.080	14 32 17.2	131.91
12	01 11 50.41	21.007	3 15 21.8	150.47	12	02 57 07.90	23.140	14 45 26.5	131.15
13	01 13 56.53	21.033	3 30 24.5	150.41	13	02 59 26.92	23.200	14 58 31.0	130.35
14	01 16 02.80	21.060	3 45 26.7	150.33	14	03 01 46.30	23.260	15 11 30.7	129.54
15	01 18 09.25	21.089	4 00 28.5	150.26	15	03 04 06.04	23.321	15 24 25.5	128.71
16	01 20 15.87	21.118	4 15 29.8	150.16	16	03 06 26.15	23.383	15 37 15.2	127.85
17	01 22 22.66	21.147	4 30 30.4	150.04	17	03 08 46.63	23.444	15 49 59.7	126.98
18	01 24 29.63	21.178	4 45 30.3	149.92	18	03 11 07.48	23.506	16 02 39.0	126.10
19	01 26 36.79	21.210	5 00 29.4	149.78	19	03 13 28.70	23.568	16 15 12.9	125.20
20	01 28 44.15	21.243	5 15 27.7	149.63	20	03 15 50.30	23.631	16 27 41.4	124.28
21	01 30 51.70	21.275	5 30 25.0	149.46	21	03 18 12.37	23.693	16 40 04.2	123.33
22	01 32 59.45	21.308	5 45 21.2	149.28	22	03 20 34.62	23.757	16 52 21.4	122.38
23	01 35 07.40	21.343	6 00 16.4	149.09	23	03 22 57.35	23.820	17 04 32.8	121.40
24	01 37 15.57	21.379	N. 6 15 10.3	148.88	24	03 25 20.46	23.883	N. 17 16 38.2	120.41

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Friday 13.					Sunday 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	03 25 20.46	23.883	N. 17 16 38.2	120.41	00	05 26 59.29	26.583	N. 24 27 13.9	52.91
01	03 27 43.95	23.948	17 28 37.7	119.40	01	05 29 38.89	26.618	24 32 26.1	51.16
02	03 30 07.83	24.012	17 40 31.0	118.37	02	05 32 18.70	26.652	24 37 27.8	49.39
03	03 32 32.09	24.075	17 52 18.1	117.33	03	05 34 58.71	26.684	24 42 18.8	47.62
04	03 34 56.73	24.139	18 03 58.9	116.26	04	05 37 38.91	26.714	24 46 59.2	45.84
05	03 37 21.76	24.204	18 15 33.2	115.17	05	05 40 19.28	26.743	24 51 28.9	44.05
06	03 39 47.18	24.268	18 27 00.9	114.07	06	05 42 59.83	26.772	24 55 47.8	42.26
07	03 42 12.97	24.332	18 38 22.0	112.96	07	05 45 40.54	26.798	24 59 56.0	40.45
08	03 44 39.16	24.397	18 49 36.4	111.82	08	05 48 21.41	26.823	25 03 53.2	38.63
09	03 47 05.73	24.460	19 00 43.8	110.66	09	05 51 02.41	26.845	25 07 39.6	36.83
10	03 49 32.68	24.524	19 11 44.3	109.49	10	05 53 43.55	26.868	25 11 15.1	35.00
11	03 52 00.02	24.588	19 22 37.7	108.30	11	05 56 24.82	26.888	25 14 39.6	33.16
12	03 54 27.74	24.652	19 33 23.9	107.09	12	05 59 06.20	26.905	25 17 53.0	31.32
13	03 56 55.84	24.716	19 44 02.8	105.87	13	06 01 47.68	26.922	25 20 55.4	29.48
14	03 59 24.33	24.781	19 54 34.4	104.63	14	06 04 29.26	26.937	25 23 46.7	27.63
15	04 01 53.21	24.844	20 04 58.4	103.37	15	06 07 10.93	26.950	25 26 26.9	25.78
16	04 04 22.46	24.907	20 15 14.8	102.08	16	06 09 52.66	26.961	25 28 56.0	23.93
17	04 06 52.09	24.969	20 25 23.4	100.79	17	06 12 34.46	26.971	25 31 14.0	22.07
18	04 09 22.09	25.032	20 35 24.3	99.48	18	06 15 16.31	26.979	25 33 20.8	20.20
19	04 11 52.47	25.093	20 45 17.2	98.15	19	06 17 58.21	26.985	25 35 16.4	18.34
20	04 14 23.21	25.155	20 55 02.1	96.81	20	06 20 40.13	26.989	25 37 00.9	16.48
21	04 16 54.33	25.217	21 04 38.9	95.44	21	06 23 22.08	26.992	25 38 34.2	14.61
22	04 19 25.81	25.277	21 14 07.4	94.06	22	06 26 04.04	26.993	25 39 56.2	12.73
23	04 21 57.65	25.338	N. 21 23 27.6	92.67	23	06 28 45.99	26.992	N. 25 41 07.0	10.87
Saturday 14.					Monday 16.				
00	04 24 29.86	25.398	N. 21 32 39.4	91.26	00	06 31 27.94	26.990	N. 25 42 06.6	09.00
01	04 27 02.42	25.457	21 41 42.7	89.83	01	06 34 09.87	26.985	25 42 55.0	07.13
02	04 29 35.34	25.516	21 50 37.3	88.38	02	06 36 51.76	26.978	25 43 32.1	05.26
03	04 32 08.61	25.574	21 59 23.2	86.92	03	06 39 33.61	26.971	25 43 58.1	03.39
04	04 34 42.23	25.632	22 08 00.3	85.43	04	06 42 15.41	26.961	25 44 12.8	01.53
05	04 37 16.19	25.688	22 16 28.4	83.94	05	06 44 57.14	26.948	25 44 16.4	00.33
06	04 39 50.48	25.743	22 24 47.6	82.43	06	06 47 38.79	26.935	25 44 08.8	02.20
07	04 42 25.11	25.799	22 32 57.6	80.90	07	06 50 20.36	26.921	25 43 50.0	04.06
08	04 45 00.07	25.853	22 40 58.4	79.37	08	06 53 01.84	26.904	25 43 20.1	05.96
09	04 47 35.34	25.906	22 48 50.0	77.82	09	06 55 43.21	26.885	25 42 39.2	07.75
10	04 50 10.94	25.959	22 56 32.2	76.25	10	06 58 24.46	26.864	25 41 47.1	09.61
11	04 52 46.85	26.011	23 04 05.0	74.67	11	07 01 05.58	26.843	25 40 43.9	11.45
12	04 55 23.07	26.062	23 11 28.2	73.07	12	07 03 46.57	26.819	25 39 29.7	13.28
13	04 57 59.59	26.111	23 18 41.8	71.46	13	07 06 27.41	26.793	25 38 04.5	15.11
14	05 00 36.40	26.160	23 25 45.7	69.83	14	07 09 08.09	26.766	25 36 28.4	16.93
15	05 03 13.51	26.208	23 32 39.8	68.19	15	07 11 48.60	26.737	25 34 41.3	18.76
16	05 05 50.89	26.254	23 39 24.0	66.54	16	07 14 28.93	26.706	25 32 43.3	20.57
17	05 08 28.56	26.300	23 45 58.3	64.88	17	07 17 09.07	26.674	25 30 34.5	22.37
18	05 11 06.49	26.343	23 52 22.6	63.20	18	07 19 49.02	26.641	25 28 14.9	24.17
19	05 13 44.68	26.386	23 58 36.7	61.52	19	07 22 28.76	26.605	25 25 44.5	25.95
20	05 16 23.12	26.428	24 04 40.8	59.83	20	07 25 08.28	26.568	25 23 03.5	27.73
21	05 19 01.81	26.468	24 10 34.6	58.11	21	07 27 47.57	26.529	25 20 11.8	29.50
22	05 21 40.74	26.508	24 16 18.1	56.38	22	07 30 26.63	26.489	25 17 09.5	31.26
23	05 24 19.90	26.546	24 21 51.2	54.65	23	07 33 05.44	26.448	25 13 56.7	33.01
24	05 26 59.29	26.583	N. 24 27 13.9	52.91	24	07 35 44.00	26.405	N. 25 10 33.4	34.75

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Tuesday 17.					Thursday 19.				
	h m s		° ' "			h m s		° ' "	
00	07 35 44.00	26.405	N. 25 10 33.4	34.75	00	09 35 27.46	23.226	N. 19 28 58.3	101.51
01	07 38 22.30	26.360	25 06 59.7	36.48	01	09 37 46.59	23.181	19 18 46.3	102.49
02	07 41 00.32	26.313	25 03 15.6	38.21	02	09 40 05.27	23.075	19 08 28.4	103.47
03	07 43 38.06	26.267	24 59 21.2	39.91	03	09 42 23.49	22.996	18 58 04.7	104.42
04	07 46 15.52	26.218	24 55 16.7	41.60	04	09 44 41.23	22.923	18 47 35.4	105.35
05	07 48 52.67	26.168	24 51 02.0	43.29	05	09 46 58.57	22.849	18 37 00.5	106.28
06	07 51 29.53	26.117	24 46 37.2	44.97	06	09 49 15.44	22.774	18 26 20.1	107.18
07	07 54 06.07	26.063	24 42 02.4	46.63	07	09 51 31.86	22.699	18 15 34.4	108.05
08	07 56 42.29	26.010	24 37 17.7	48.27	08	09 53 47.83	22.623	18 04 43.5	108.92
09	07 59 18.19	25.955	24 32 23.2	49.90	09	09 56 03.36	22.551	17 53 47.4	109.78
10	08 01 53.75	25.898	24 27 18.9	51.53	10	09 58 18.44	22.477	17 42 46.2	110.61
11	08 04 28.97	25.841	24 22 04.9	53.14	11	10 00 33.08	22.403	17 31 40.1	111.43
12	08 07 03.84	25.783	24 16 41.2	54.73	12	10 02 47.28	22.330	17 20 29.1	112.23
13	08 09 38.36	25.723	24 11 08.1	56.31	13	10 05 01.04	22.258	17 09 13.3	113.02
14	08 12 12.51	25.662	24 05 25.5	57.88	14	10 07 14.37	22.185	16 57 52.9	113.78
15	08 14 46.30	25.600	23 59 33.6	59.43	15	10 09 27.26	22.113	16 46 28.0	114.53
16	08 17 19.71	25.538	23 53 32.4	60.97	16	10 11 39.72	22.041	16 34 58.5	115.27
17	08 19 52.75	25.474	23 47 22.0	62.48	17	10 13 51.75	21.970	16 23 24.7	115.98
18	08 22 25.40	25.410	23 41 02.6	63.98	18	10 16 03.36	21.899	16 11 46.7	116.69
19	08 24 57.67	25.345	23 34 34.2	65.48	19	10 18 14.54	21.829	16 00 04.4	117.39
20	08 27 29.54	25.278	23 27 56.9	66.95	20	10 20 25.31	21.759	15 48 18.0	118.07
21	08 30 01.01	25.212	23 21 10.8	68.42	21	10 22 35.65	21.689	15 36 27.0	118.73
22	08 32 32.08	25.144	23 14 15.9	69.87	22	10 24 45.58	21.621	15 24 33.3	119.37
23	08 35 02.74	25.075	N. 23 07 12.4	71.29	23	10 26 55.10	21.553	N. 15 12 35.2	120.00
Wednesday 18.					Friday 20.				
00	08 37 32.98	25.006	N. 23 00 00.4	72.70	00	10 29 04.21	21.485	N. 15 00 33.3	120.62
01	08 40 02.81	24.936	22 52 40.0	74.09	01	10 31 12.02	21.415	14 48 27.8	121.21
02	08 42 32.21	24.865	22 45 11.3	75.48	02	10 33 21.22	21.351	14 36 18.8	121.79
03	08 45 01.19	24.795	22 37 34.3	76.84	03	10 35 29.13	21.285	14 24 05.3	122.37
04	08 47 29.75	24.723	22 29 49.2	78.18	04	10 37 36.04	21.216	14 11 50.4	122.93
05	08 49 57.87	24.650	22 21 56.1	79.51	05	10 39 43.79	21.154	13 59 31.2	123.47
06	08 52 25.55	24.578	22 13 55.1	80.83	06	10 41 50.49	21.090	13 47 07.8	124.00
07	08 54 52.81	24.506	22 05 46.2	82.13	07	10 43 56.84	21.027	13 34 43.7	124.50
08	08 57 19.62	24.432	21 57 29.6	83.40	08	10 46 02.81	20.963	13 22 14.8	125.00
09	08 59 45.99	24.358	21 49 05.4	84.66	09	10 48 08.40	20.901	13 09 43.3	125.48
10	09 02 11.92	24.284	21 40 33.7	85.90	10	10 50 13.62	20.839	12 57 00.0	125.96
11	09 04 37.40	24.209	21 31 54.6	87.13	11	10 52 18.47	20.775	12 44 31.8	126.42
12	09 07 02.43	24.134	21 23 08.1	88.34	12	10 54 22.96	20.718	12 31 52.0	126.86
13	09 09 27.01	24.059	21 14 14.5	89.53	13	10 56 27.09	20.658	12 19 00.3	127.29
14	09 11 51.14	23.984	21 05 13.7	90.71	14	10 58 30.86	20.599	12 06 24.3	127.70
15	09 14 14.82	23.908	20 56 00.0	91.87	15	11 00 34.28	20.540	11 53 37.1	128.11
16	09 16 38.04	23.833	20 46 51.3	93.01	16	11 02 37.34	20.483	11 40 47.2	128.51
17	09 19 00.81	23.758	20 37 29.9	94.13	17	11 04 40.07	20.429	11 27 53.7	128.88
18	09 21 23.13	23.682	20 28 01.8	95.24	18	11 06 42.45	20.369	11 15 02.6	129.25
19	09 23 44.09	23.606	20 18 27.0	96.33	19	11 08 44.50	20.313	11 02 04.4	129.61
20	09 26 06.40	23.530	20 08 45.8	97.39	20	11 10 46.21	20.256	10 49 05.3	130.00
21	09 28 27.35	23.453	19 58 58.3	98.45	21	11 12 47.60	20.200	10 36 04.6	130.28
22	09 30 47.84	23.378	19 49 04.4	99.49	22	11 14 48.67	20.152	10 23 02.0	130.50
23	09 33 07.88	23.302	19 39 04.4	100.51	23	11 16 49.42	20.098	10 09 57.5	130.60
24	09 35 27.46	23.226	N. 19 28 58.3	101.51	24	11 18 49.85	20.047	N. 0 50 51.2	131.19

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Saturday 21.					Monday 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	11 18 49.85	20.047	N. 9 56 51.2	131.19	00	12 50 30.73	18.449	S. 0 47 01.1	133.59
01	11 20 49.98	19.995	9 43 43.2	131.48	01	12 52 21.38	18.435	1 00 22.2	133.44
02	11 22 49.79	19.944	9 30 33.5	131.74	02	12 54 11.95	18.422	1 13 42.4	133.28
03	11 24 49.31	19.895	9 17 22.3	132.00	03	12 56 02.44	18.408	1 27 01.6	133.11
04	11 26 48.53	19.846	9 04 09.5	132.26	04	12 57 52.85	18.396	1 40 19.7	132.93
05	11 28 47.46	19.798	8 50 55.2	132.49	05	12 59 43.19	18.385	1 53 36.7	132.75
06	11 30 46.10	19.750	8 37 39.6	132.71	06	13 01 33.47	18.374	2 06 52.7	132.56
07	11 32 44.46	19.703	8 24 22.7	132.93	07	13 03 23.68	18.363	2 20 07.4	132.36
08	11 34 42.54	19.658	8 11 04.5	133.13	08	13 05 13.83	18.354	2 33 21.0	132.16
09	11 36 40.35	19.613	7 57 45.1	133.33	09	13 07 03.93	18.346	2 46 33.3	131.95
10	11 38 37.89	19.568	7 44 24.5	133.51	10	13 08 53.98	18.338	2 59 44.4	131.73
11	11 40 35.17	19.524	7 31 03.0	133.68	11	13 10 43.98	18.330	3 12 54.1	131.50
12	11 42 32.18	19.481	7 17 40.4	133.84	12	13 12 33.94	18.324	3 26 02.4	131.27
13	11 44 28.94	19.439	7 04 16.9	133.99	13	13 14 23.87	18.318	3 39 09.3	131.03
14	11 46 25.15	19.398	6 50 52.5	134.13	14	13 16 13.76	18.313	3 52 14.8	130.79
15	11 48 21.71	19.357	6 37 27.4	134.26	15	13 18 03.62	18.308	4 05 18.8	130.54
16	11 50 17.73	19.318	6 24 01.4	134.38	16	13 19 53.46	18.305	4 18 21.3	130.28
17	11 52 13.52	19.278	6 10 34.8	134.49	17	13 21 43.28	18.303	4 31 22.2	130.02
18	11 54 09.07	19.239	5 57 07.5	134.60	18	13 23 33.09	18.300	4 44 21.5	129.75
19	11 56 04.39	19.203	5 43 39.6	134.69	19	13 25 22.88	18.298	4 57 19.2	129.48
20	11 57 59.50	19.166	5 30 11.2	134.77	20	13 27 12.67	18.298	5 10 15.2	129.18
21	11 59 54.38	19.129	5 16 42.4	134.84	21	13 29 02.45	18.298	5 23 09.4	128.89
22	12 01 49.05	19.094	5 03 13.1	134.91	22	13 30 52.24	18.298	5 36 01.9	128.60
23	12 03 43.51	19.060	N. 4 49 43.5	134.96	23	13 32 42.03	18.299	S. 5 18 52.6	128.29
Sunday 22.					Tuesday 24.				
00	12 05 37.77	19.027	N. 4 36 13.6	135.00	00	13 34 31.83	18.301	S. 6 01 41.4	127.98
01	12 07 31.83	18.993	4 22 43.5	135.04	01	13 36 21.64	18.304	6 14 28.4	127.67
02	12 09 25.69	18.961	4 09 13.1	135.08	02	13 38 11.48	18.308	6 27 13.4	127.34
03	12 11 19.37	18.930	3 55 42.6	135.09	03	13 40 01.33	18.311	6 39 56.5	127.02
04	12 13 12.85	18.899	3 42 12.0	135.10	04	13 41 51.21	18.317	6 52 37.6	126.68
05	12 15 06.16	18.870	3 28 41.4	135.10	05	13 43 41.13	18.322	7 05 16.7	126.34
06	12 16 59.29	18.841	3 15 10.8	135.09	06	13 45 31.07	18.328	7 17 53.7	125.99
07	12 18 52.25	18.813	3 01 40.3	135.08	07	13 47 21.06	18.334	7 30 28.6	125.63
08	12 20 45.04	18.785	2 48 09.9	135.06	08	13 49 11.08	18.342	7 43 01.3	125.28
09	12 22 37.67	18.758	2 34 39.6	135.03	09	13 51 01.16	18.350	7 55 31.9	124.91
10	12 24 30.14	18.732	2 21 09.6	134.98	10	13 52 51.28	18.358	8 08 00.2	124.53
11	12 26 22.45	18.707	2 07 39.8	134.93	11	13 54 41.46	18.368	8 20 26.3	124.16
12	12 28 14.62	18.683	1 54 10.4	134.88	12	13 56 31.70	18.378	8 32 50.1	123.78
13	12 30 06.65	18.659	1 40 41.3	134.81	13	13 58 22.00	18.388	8 45 11.6	123.38
14	12 31 58.53	18.637	1 27 12.7	134.73	14	14 00 12.36	18.400	8 57 30.7	122.98
15	12 33 50.29	18.615	1 13 44.5	134.66	15	14 02 02.80	18.413	9 09 47.4	122.58
16	12 35 41.91	18.593	1 00 16.8	134.58	16	14 03 53.31	18.424	9 22 01.6	122.16
17	12 37 33.40	18.573	0 46 49.6	134.48	17	14 05 43.89	18.438	9 34 13.3	121.75
18	12 39 24.78	18.553	0 33 23.1	134.37	18	14 07 34.56	18.453	9 46 22.6	121.33
19	12 41 16.03	18.533	0 19 57.2	134.26	19	14 09 25.32	18.467	9 58 29.2	120.89
20	12 43 07.18	18.516	N. 0 06 32.0	134.14	20	14 11 16.16	18.481	10 10 33.3	120.46
21	12 44 58.22	18.498	S. 0 06 52.5	134.02	21	14 13 07.09	18.497	10 22 34.7	120.02
22	12 46 49.15	18.481	0 20 16.2	133.88	22	14 14 58.12	18.514	10 34 33.5	119.57
23	12 48 39.99	18.465	0 33 39.1	133.74	23	14 16 49.26	18.531	10 46 29.5	119.11
24	12 50 30.73	18.449	S. 0 47 01.1	133.59	24	14 18 40.49	18.548	S. 10 58 22.8	118.65

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Wednesday 25.					Friday 27.				
	h m s	s	° "	"		h m s	s	° "	"
00	14 18 40.49	18.548	S. 10 58 22.8	118.65	00	15 50 45.89	20.002	S. 19 21 54.8	88.45
01	14 20 31.83	18.567	11 10 13.3	118.18	01	15 52 46.02	20.042	19 30 43.1	87.64
02	14 22 23.29	18.585	11 22 00.9	117.70	02	15 54 46.39	20.082	19 39 26.5	86.83
03	14 24 14.85	18.604	11 33 45.7	117.23	03	15 56 47.00	20.123	19 48 05.0	86.01
04	14 26 06.54	18.625	11 45 27.6	116.74	04	15 58 47.86	20.164	19 56 38.6	85.18
05	14 27 58.35	18.645	11 57 06.6	116.24	05	16 00 48.97	20.205	20 05 07.1	84.33
06	14 29 50.28	18.666	12 08 42.5	115.74	06	16 02 50.32	20.246	20 13 30.5	83.48
07	14 31 42.34	18.688	12 20 15.5	115.23	07	16 04 51.92	20.287	20 21 48.9	82.63
08	14 33 34.54	18.711	12 31 45.3	114.72	08	16 06 53.76	20.328	20 30 02.1	81.77
09	14 35 26.87	18.733	12 43 12.1	114.20	09	16 08 55.86	20.371	20 38 10.1	80.89
10	14 37 19.33	18.756	12 54 35.7	113.67	10	16 10 58.21	20.413	20 46 12.8	80.02
11	14 39 11.94	18.781	13 05 56.1	113.13	11	16 13 00.81	20.455	20 54 10.3	79.13
12	14 41 04.70	18.806	13 17 13.3	112.59	12	16 15 03.67	20.498	21 02 02.4	78.23
13	14 42 57.61	18.830	13 28 27.2	112.05	13	16 17 06.78	20.539	21 09 49.1	77.33
14	14 44 50.66	18.855	13 39 37.9	111.49	14	16 19 10.14	20.582	21 17 30.4	76.43
15	14 46 43.87	18.882	13 50 45.1	110.93	15	16 21 13.76	20.625	21 25 06.2	75.51
16	14 48 37.24	18.909	14 01 49.0	110.37	16	16 23 17.64	20.668	21 32 36.5	74.58
17	14 50 30.78	18.936	14 12 49.5	109.79	17	16 25 21.77	20.710	21 40 01.1	73.64
18	14 52 24.47	18.963	14 23 46.5	109.21	18	16 27 26.16	20.753	21 47 20.2	72.71
19	14 54 18.34	18.992	14 34 40.0	108.63	19	16 29 30.80	20.795	21 54 33.6	71.75
20	14 56 12.37	19.020	14 45 30.0	108.03	20	16 31 35.70	20.838	22 01 41.2	70.79
21	14 58 06.58	19.049	14 56 16.3	107.43	21	16 33 40.86	20.882	22 08 43.1	69.83
22	15 00 00.96	19.079	15 06 59.1	106.82	22	16 35 46.28	20.924	22 15 39.1	68.85
23	15 01 55.53	19.110	S. 15 17 38.1	106.20	23	16 37 51.95	20.967	S. 22 22 29.3	67.87
Thursday 26.					Saturday 28.				
00	15 03 50.28	19.140	S. 15 28 13.5	105.58	00	16 39 57.88	21.010	S. 22 29 13.5	66.88
01	15 05 45.21	19.172	15 38 45.1	104.95	01	16 42 04.07	21.053	22 35 51.8	65.88
02	15 07 40.34	19.203	15 49 12.9	104.31	02	16 44 10.51	21.095	22 42 24.1	64.88
03	15 09 35.65	19.235	15 59 36.8	103.66	03	16 46 17.21	21.138	22 48 50.3	63.86
04	15 11 31.16	19.268	16 09 56.8	103.02	04	16 48 24.17	21.182	22 55 10.4	62.83
05	15 13 26.86	19.301	16 20 13.0	102.36	05	16 50 31.39	21.223	23 01 24.3	61.80
06	15 15 22.77	19.335	16 30 25.1	101.69	06	16 52 38.85	21.265	23 07 32.0	60.77
07	15 17 18.88	19.368	16 40 33.3	101.03	07	16 54 46.57	21.308	23 13 33.5	59.72
08	15 19 15.19	19.403	16 50 37.4	100.34	08	16 56 54.55	21.350	23 19 28.6	58.67
09	15 21 11.71	19.437	17 00 37.4	99.65	09	16 59 02.77	21.392	23 25 17.5	57.61
10	15 23 08.43	19.472	17 10 33.2	98.96	10	17 01 11.25	21.434	23 30 59.9	56.53
11	15 25 05.37	19.508	17 20 24.9	98.26	11	17 03 19.98	21.475	23 36 35.9	55.46
12	15 27 02.53	19.544	17 30 12.3	97.54	12	17 05 28.95	21.516	23 42 05.4	54.38
13	15 28 59.90	19.580	17 39 55.4	96.83	13	17 07 38.17	21.558	23 47 28.4	53.28
14	15 30 57.49	19.618	17 49 34.3	96.11	14	17 09 47.64	21.598	23 52 44.8	52.18
15	15 32 55.31	19.654	17 59 08.7	95.37	15	17 11 57.35	21.639	23 57 54.5	51.07
16	15 34 53.34	19.691	18 08 38.7	94.63	16	17 14 07.31	21.680	24 02 57.6	49.95
17	15 36 51.60	19.729	18 18 04.3	93.89	17	17 16 17.51	21.720	24 07 53.9	48.83
18	15 38 50.09	19.767	18 27 25.4	93.14	18	17 18 27.95	21.759	24 12 43.5	47.70
19	15 40 48.80	19.805	18 36 42.0	92.38	19	17 20 38.62	21.798	24 17 26.3	46.57
20	15 42 47.75	19.844	18 45 53.9	91.60	20	17 22 49.53	21.838	24 22 02.3	45.41
21	15 44 46.93	19.883	18 55 01.2	90.83	21	17 25 00.68	21.877	24 26 31.3	44.26
22	15 46 46.35	19.923	19 04 03.8	90.04	22	17 27 12.05	21.915	24 30 53.4	43.11
23	15 48 46.00	19.962	19 13 01.7	89.25	23	17 29 23.66	21.953	24 35 08.6	41.94
24	15 50 45.89	20.002	S. 19 21 54.8	88.45	24	17 31 35.49	21.991	S. 24 39 16.7	40.77

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Sunday 29.					Tuesday 31.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	17 31 35.49	21.991	S. 24 39 16.7	40.77	00	19 20 25.08	23.086	S. 25 28 36.9	21.83
01	17 33 47.55	22.028	24 43 17.8	39.58	01	19 22 43.61	23.090	25 26 21.8	23.20
02	17 35 59.83	22.065	24 47 11.7	38.39	02	19 25 02.16	23.094	25 23 58.5	24.58
03	17 38 12.33	22.101	24 50 58.5	37.19	03	19 27 20.74	23.097	25 21 26.9	25.96
04	17 40 25.04	22.137	24 54 38.0	35.99	04	19 29 39.32	23.098	25 18 47.0	27.33
05	17 42 37.97	22.173	24 58 10.4	34.78	05	19 31 57.92	23.100	25 15 58.9	28.70
06	17 44 51.12	22.208	25 01 35.4	33.57	06	19 34 16.52	23.099	25 13 02.6	30.08
07	17 47 04.47	22.242	25 04 53.2	32.35	07	19 36 35.11	23.098	25 09 58.0	31.46
08	17 49 18.02	22.276	25 08 03.6	31.13	08	19 38 53.70	23.098	25 06 45.1	32.83
09	17 51 31.78	22.310	25 11 06.7	29.89	09	19 41 12.28	23.096	25 03 24.0	34.20
10	17 53 45.74	22.343	25 14 02.3	28.64	10	19 43 30.85	23.093	24 59 54.7	35.57
11	17 55 59.89	22.375	25 16 50.4	27.40	11	19 45 49.30	23.088	24 56 17.2	36.93
12	17 58 14.24	22.408	25 19 31.1	26.15	12	19 48 07.91	23.084	24 52 31.5	38.30
13	18 00 28.78	22.438	25 22 04.2	24.88	13	19 50 26.40	23.079	24 48 37.6	39.67
14	18 02 43.50	22.469	25 24 29.7	23.63	14	19 52 44.86	23.073	24 44 35.5	41.03
15	18 04 58.41	22.499	25 26 47.7	22.36	15	19 55 03.28	23.066	24 40 25.2	42.40
16	18 07 13.49	22.528	25 28 58.0	21.08	16	19 57 21.65	23.058	24 36 06.7	43.76
17	18 09 28.74	22.557	25 31 00.6	19.80	17	19 59 39.98	23.050	24 31 40.1	45.11
18	18 11 44.17	22.585	25 32 55.6	18.52	18	20 01 58.25	23.041	24 27 05.4	46.46
19	18 13 59.76	22.613	25 34 42.8	17.22	19	20 04 16.47	23.032	24 22 22.6	47.81
20	18 16 15.52	22.640	25 36 22.2	15.93	20	20 06 34.63	23.021	24 17 31.7	49.16
21	18 18 31.44	22.666	25 37 53.9	14.63	21	20 08 52.22	23.010	24 12 32.7	50.50
22	18 20 47.51	22.691	25 39 17.7	13.32	22	20 11 10.75	22.998	24 07 25.7	51.83
23	18 23 03.73	22.716	S. 25 40 33.7	12.01	23	20 13 28.70	22.985	S. 24 02 10.7	53.18
Monday 30.					Wednesday, AUG. 1.				
00	18 25 20.10	22.740	S. 25 41 41.8	10.69	00	20 15 46.57	22.972	S. 23 56 47.6	54.51
01	18 27 36.61	22.763	25 42 42.0	09.38					
02	18 29 53.26	22.786	25 43 34.3	08.05					
03	18 32 10.04	22.808	25 44 18.6	06.72					
04	18 34 26.95	22.829	25 44 54.9	05.38					
05	18 36 43.99	22.849	25 45 23.2	04.05					
06	18 39 01.14	22.868	25 45 43.5	02.72					
07	18 41 18.41	22.888	25 45 55.8	01.37					
08	18 43 35.79	22.906	25 45 59.9	00.02					
09	18 45 53.28	22.923	25 45 56.0	01.33					
10	18 48 10.87	22.939	25 45 44.0	02.68					
11	18 50 28.55	22.955	25 45 23.9	04.03					
12	18 52 46.33	22.971	25 44 55.6	05.39					
13	18 55 04.20	22.984	25 44 19.2	06.75					
14	18 57 22.14	22.998	25 43 34.6	08.12					
15	18 59 40.17	23.011	25 42 41.8	09.48					
16	19 01 58.27	23.022	25 41 40.8	10.85					
17	19 04 16.43	23.033	25 40 31.6	12.22					
18	19 06 34.66	23.043	25 39 14.2	13.58					
19	19 08 52.95	23.053	25 37 48.6	14.96					
20	19 11 11.29	23.061	25 36 14.7	16.33					
21	19 13 29.68	23.068	25 34 32.6	17.70					
22	19 15 48.11	23.075	25 32 42.3	19.08					
23	19 18 06.58	23.081	25 30 43.7	20.45					
24	19 20 25.08	23.086	S. 25 28 36.9	21.83					

PHASES OF THE MOON.

			h	m
July 3	○ Full Moon	..	02	48.5
" 10	☾ Last Quarter	..	12	15.9
" 17	☾ New Moon	..	04	35.5
" 24	☾ First Quarter	..	14	38.1

			h
July 14	☾ Perigee	..	15.1
" 26	☾ Apogee	..	12.1

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semi- diameter passing the Meridian.*	Equation of Time, to be added to	Var. in hour.
		Apparent RightAscension.	Var. in hour.	Apparent Declination.	Var. in hour.		subtracted from Apparent Time.	
		h m s		° ' "	"	m s	m	
Wed.	1	08 45 34.88	9.704	N. 18 01 28.4	37.75	1 06.58	6 10.95	0.152
Thur.	2	08 49 27.47	9.679	17 46 13.5	38.48	1 06.49	6 06.99	0.177
Frid.	3	08 53 19.46	9.654	17 30 41.4	39.20	1 06.41	6 02.44	0.202
Sat.	4	08 57 10.85	9.629	17 14 52.1	39.90	1 06.32	5 57.29	0.227
Sun.	5	09 01 01.65	9.605	16 58 46.1	40.60	1 06.23	5 51.55	0.251
Mon.	6	09 04 51.87	9.580	16 42 23.5	41.28	1 06.15	5 45.23	0.275
Tues.	7	09 08 41.51	9.556	16 25 44.8	41.95	1 06.06	5 38.33	0.299
Wed.	8	09 12 30.58	9.533	16 08 50.1	42.61	1 05.98	5 30.87	0.323
Thur.	9	09 16 19.09	9.509	15 51 39.7	43.25	1 05.89	5 22.84	0.346
Frid.	10	09 20 07.03	9.486	15 34 14.0	43.89	1 05.81	5 14.25	0.369
Sat.	11	09 23 54.43	9.463	15 16 33.2	44.51	1 05.72	5 05.11	0.392
Sun.	12	09 27 41.27	9.440	14 58 37.7	45.12	1 05.64	4 55.42	0.415
Mon.	13	09 31 27.56	9.418	14 40 27.8	45.71	1 05.56	4 45.19	0.438
Tues.	14	09 35 13.32	9.395	14 22 03.8	46.29	1 05.48	4 34.42	0.460
Wed.	15	09 38 58.53	9.373	14 03 25.9	46.86	1 05.40	4 23.11	0.482
Thur.	16	09 42 43.21	9.351	13 44 34.7	47.41	1 05.33	4 11.27	0.504
Frid.	17	09 46 27.37	9.329	13 25 30.3	47.95	1 05.25	3 58.91	0.526
Sat.	18	09 50 11.01	9.307	13 06 13.1	48.48	1 05.18	3 46.02	0.547
Sun.	19	09 53 54.13	9.286	12 46 43.5	48.99	1 05.11	3 32.63	0.569
Mon.	20	09 57 36.75	9.266	12 27 01.8	49.48	1 05.03	3 18.74	0.589
Tues.	21	10 01 18.89	9.245	12 07 08.4	49.97	1 04.97	3 04.35	0.609
Wed.	22	10 05 00.54	9.226	11 47 03.5	50.44	1 04.90	2 49.49	0.629
Thur.	23	10 08 41.72	9.206	11 26 47.5	50.89	1 04.83	2 34.16	0.648
Frid.	24	10 12 22.45	9.188	11 06 20.7	51.34	1 04.77	2 18.38	0.667
Sat.	25	10 16 02.74	9.170	10 45 43.4	51.77	1 04.71	2 02.16	0.685
Sun.	26	10 19 42.61	9.153	10 24 56.0	52.18	1 04.65	1 45.52	0.702
Mon.	27	10 23 22.08	9.136	10 03 58.8	52.58	1 04.60	1 28.48	0.718
Tues.	28	10 27 01.15	9.120	9 42 52.1	52.97	1 04.54	1 11.04	0.734
Wed.	29	10 30 39.85	9.105	9 21 36.2	53.35	1 04.49	0 53.24	0.749
Thur.	30	10 34 18.19	9.091	9 00 11.4	53.71	1 04.44	0 35.08	0.764
Frid.	31	10 37 56.21	9.077	8 38 38.1	54.06	1 04.39	0 16.59	0.777
Sat.	32	10 41 33.91	9.065	N. 8 16 56.4	54.40	1 04.35	0 02.21	0.789

*Mean Time of the Semidiameter passing may be found by subtracting 0.18 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to	Sidereal Time.
		<i>Apparent</i> Right Ascension.	<i>Apparent</i> Declination.	Semi- diameter.*	<i>subtracted from</i> <i>Apparent Time.</i>	
		h m s	° ' "	' "	m s	h m s
Wed.	1	08 45 33.88	N. 18 01 32.3	15 47.15	6 10.96	08 39 22.92
Thur.	2	08 49 26.49	17 46 17.5	15 47.27	6 07.01	08 43 19.48
Frid.	3	08 53 18.49	17 30 45.3	15 47.40	6 02.46	08 47 16.03
Sat.	4	08 57 09.90	17 14 56.1	15 47.53	5 57.31	08 51 12.59
Sun.	5	09 01 00.72	16 58 50.0	15 47.66	5 51.57	08 55 09.14
Mon.	6	09 04 50.95	16 42 27.5	15 47.80	5 45.25	08 59 05.70
Tues.	7	09 08 40.61	16 25 48.7	15 47.94	5 38.36	09 03 02.26
Wed.	8	09 12 29.71	16 08 54.0	15 48.08	5 30.89	09 06 58.81
Thur.	9	09 16 18.24	15 51 43.6	15 48.23	5 22.87	09 10 55.37
Frid.	10	09 20 06.21	15 34 17.8	15 48.38	5 14.28	09 14 51.92
Sat.	11	09 23 53.62	15 16 37.0	15 48.53	5 05.14	09 18 48.48
Sun.	12	09 27 40.49	14 58 41.4	15 48.69	4 55.46	09 22 45.03
Mon.	13	09 31 26.82	14 40 31.4	15 48.85	4 45.23	09 26 41.59
Tues.	14	09 35 12.60	14 22 07.3	15 49.02	4 34.45	09 30 38.14
Wed.	15	09 38 57.85	14 03 29.4	15 49.19	4 23.15	09 34 34.70
Thur.	16	09 42 42.56	13 44 38.0	15 49.37	4 11.31	09 38 31.25
Frid.	17	09 46 26.75	13 25 33.5	15 49.55	3 58.94	09 42 27.81
Sat.	18	09 50 10.42	13 06 16.2	15 49.74	3 46.06	09 46 24.36
Sun.	19	09 53 53.58	12 46 46.4	15 49.93	3 32.66	09 50 20.92
Mon.	20	09 57 36.24	12 27 04.6	15 50.13	3 18.77	09 54 17.47
Tues.	21	10 01 18.41	12 07 10.9	15 50.33	3 04.38	09 58 14.03
Wed.	22	10 05 00.10	11 47 05.9	15 50.53	2 49.52	10 02 10.58
Thur.	23	10 08 41.33	11 26 49.7	15 50.74	2 34.19	10 06 07.14
Frid.	24	10 12 22.10	11 06 22.7	15 50.95	2 18.41	10 10 03.69
Sat.	25	10 16 02.43	10 45 45.2	15 51.16	2 02.19	10 14 00.25
Sun.	26	10 19 42.34	10 24 57.6	15 51.38	1 45.55	10 17 56.80
Mon.	27	10 23 21.85	10 04 00.1	15 51.60	1 28.50	10 21 53.35
Tues.	28	10 27 00.97	9 42 53.1	15 51.82	1 11.06	10 25 49.91
Wed.	29	10 30 39.71	9 21 37.0	15 52.04	0 53.25	10 29 46.46
Thur.	30	10 34 18.10	9 00 11.9	15 52.26	0 35.09	10 33 43.02
Frid.	31	10 37 56.17	8 38 38.3	15 52.49	0 16.60	10 37 39.57
Sat.	32	10 41 33.92	N. 8 16 56.4	15 52.71	0 02.21	10 41 36.12

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
	12h.	12h.			ch.	12h.	ch.	12h.
	° ' "	"		h m s	' "	' "	' "	' "
1	128 57 27.0	S. 0.50	0.0063863	03 22 02.17	15 17.00	15 21.41	56 05.49	56 21.71
2	129 54 50.9	0.54	0.0063293	03 18 06.26	15 25.84	15 30.20	56 37.94	56 53.97
3	130 52 15.8	0.55	0.0062710	03 14 10.35	15 34.47	15 38.60	57 09.64	57 24.80
4	131 49 41.7	0.53	0.0062116	03 10 14.44	15 42.56	15 46.31	57 39.31	57 53.10
5	132 47 08.8	0.49	0.0061508	03 06 18.53	15 49.85	15 53.16	58 06.09	58 18.23
6	133 44 37.1	0.41	0.0060887	03 02 22.62	15 56.23	15 59.06	58 29.51	58 39.90
7	134 42 06.7	0.30	0.0060251	02 58 26.71	16 01.65	16 03.97	58 49.38	58 57.92
8	135 39 37.7	0.18	0.0059599	02 54 30.80	16 06.04	16 07.82	59 05.49	59 12.03
9	136 37 10.1	S. 0.04	0.0058931	02 50 34.89	16 09.30	16 10.45	59 17.47	59 21.71
10	137 34 43.9	N. 0.10	0.0058244	02 46 38.98	16 11.25	16 11.64	59 24.62	59 26.06
11	138 32 19.2	0.24	0.0057538	02 42 43.07	16 11.60	16 11.08	59 25.91	59 24.01
12	139 29 55.9	0.37	0.0056811	02 38 47.16	16 10.05	16 08.48	59 20.23	59 14.48
13	140 27 34.0	0.48	0.0056063	02 34 51.25	16 06.36	16 03.67	59 06.68	58 56.82
14	141 25 13.5	0.57	0.0055292	02 30 55.34	16 00.44	15 56.68	58 44.94	58 31.14
15	142 22 54.3	0.62	0.0054500	02 26 59.43	15 52.43	15 47.77	58 15.57	57 58.46
16	143 20 36.4	0.65	0.0053685	02 23 03.52	15 42.77	15 37.50	57 40.09	57 20.76
17	144 18 19.7	0.65	0.0052848	02 19 07.61	15 32.07	15 26.58	57 00.83	56 40.65
18	145 16 04.2	0.62	0.0051991	02 15 11.71	15 21.12	15 15.79	56 20.61	56 01.07
19	146 13 50.0	0.56	0.0051113	02 11 15.80	15 10.70	15 05.93	55 42.37	55 24.86
20	147 11 36.9	0.48	0.0050217	02 07 19.89	15 01.56	14 57.68	55 08.84	54 54.58
21	148 09 25.0	0.38	0.0049304	02 03 23.98	14 54.33	14 51.58	54 42.31	54 32.22
22	149 07 14.3	0.28	0.0048374	01 59 28.07	14 49.48	14 48.04	54 24.48	54 19.20
23	150 05 04.7	0.17	0.0047429	01 55 32.16	14 47.29	14 47.25	54 16.46	54 16.31
24	151 02 56.4	N. 0.05	0.0046470	01 51 36.25	14 47.92	14 49.28	54 18.76	54 23.77
25	152 00 49.4	S. 0.07	0.0045498	01 47 40.35	14 51.33	14 54.02	54 31.27	54 41.15
26	152 58 43.6	0.17	0.0044515	01 43 44.44	14 57.32	15 01.17	54 53.26	55 07.41
27	153 56 39.2	0.26	0.0043521	01 39 48.53	15 05.53	15 10.30	55 23.39	55 40.93
28	154 54 36.1	0.33	0.0042518	01 35 52.62	15 15.42	15 20.80	55 59.72	56 19.44
29	155 52 34.5	0.38	0.0041508	01 31 56.71	15 26.32	15 31.90	56 39.72	57 00.20
30	156 50 34.4	0.40	0.0040491	01 28 00.80	15 37.43	15 42.81	57 20.50	57 40.23
31	157 48 35.9	0.39	0.0039468	01 24 04.90	15 47.93	15 52.71	57 59.03	58 16.56
32	158 46 39.0	S. 0.34	0.0038439	01 20 08.99	15 57.06	16 00.92	58 32.53	58 46.70

MEAN TIME.

Day of the Month.	THE MOON'S						
	Longitude.		Latitude.		Age.	Meridian Passage.	
	ch.	12h.	ch.	12h.	ch.	Upper.	Lower.
	° ' "	° ' "	° ' "	° ' "	d	h m	h m
1	300 46 13.2	307 12 12.4	S. 4 03 05.2	S. 4 22 00.4	14.81	* *	12 04.0
2	313 42 14.5	320 16 12.3	4 37 43.0	4 49 54.6	15.81	00 30.1	12 55.7
3	326 53 55.2	333 35 09.6	4 58 19.1	5 02 43.4	16.81	01 21.0	13 45.8
4	340 19 39.7	347 07 08.4	5 02 57.7	4 58 56.2	17.81	02 10.2	14 34.2
5	353 57 18.0	0 49 51.2	4 50 37.3	4 38 03.7	18.81	02 58.0	15 21.7
6	7 44 32.0	14 41 05.5	4 21 22.4	4 00 45.1	19.81	03 45.4	16 09.2
7	21 39 18.9	28 39 01.4	3 36 27.5	3 08 49.4	20.81	04 33.3	16 57.8
8	35 40 03.6	42 42 17.9	2 38 14.2	2 05 09.1	21.81	05 23.0	17 48.8
9	49 45 37.4	56 49 55.1	1 30 03.8	S. 0 53 30.7	22.81	06 15.5	18 43.0
10	63 55 03.0	71 00 51.9	S. 0 16 04.1	N. 0 21 40.0	23.81	07 11.5	19 40.8
11	78 07 00.6	85 13 41.1	N. 0 59 04.9	1 35 33.8	24.81	08 10.8	20 41.4
12	92 20 07.8	99 26 07.1	2 10 30.9	2 43 21.6	25.81	09 12.3	21 43.1
13	106 31 12.9	113 34 56.2	3 13 34.2	3 40 40.1	26.81	10 13.6	22 43.4
14	120 36 45.1	127 36 07.0	4 04 15.0	4 23 59.3	27.81	11 12.5	23 40.5
15	134 32 29.0	141 25 19.7	4 39 38.7	4 51 04.4	28.81	12 07.5	* *
16	148 14 10.7	154 58 37.4	4 58 12.8	5 01 05.3	0.42	12 58.2	00 33.4
17	161 38 20.8	168 13 07.4	4 59 48.0	4 54 30.7	1.42	13 45.2	01 22.1
18	174 42 50.5	181 07 29.8	4 45 26.7	4 32 51.5	2.42	14 29.3	02 07.6
19	187 27 11.9	193 42 09.5	4 17 02.4	3 58 17.8	3.42	15 11.6	02 50.6
20	199 52 41.1	205 59 10.7	3 36 56.4	3 13 17.3	4.42	15 53.3	03 32.5
21	212 02 06.7	218 02 01.1	2 47 39.3	2 20 20.8	5.42	16 35.4	04 14.3
22	223 59 29.6	229 55 10.0	1 51 39.7	1 21 53.6	6.42	17 18.7	04 56.8
23	235 49 42.3	241 43 47.1	N. 0 51 19.4	N. 0 20 14.3	7.42	18 04.0	05 41.0
24	247 38 06.0	253 33 20.3	S. 0 11 05.2	S. 0 42 21.7	8.42	18 51.7	06 27.5
25	259 30 10.7	265 29 16.6	1 13 18.1	1 43 36.6	9.42	19 41.9	07 16.5
26	271 31 15.1	277 36 40.7	2 12 58.5	2 41 04.6	10.42	20 34.0	08 07.7
27	283 46 04.6	289 59 53.5	3 07 34.8	3 32 08.3	11.42	21 27.2	09 00.5
28	296 18 29.2	302 42 07.7	3 54 23.6	4 13 59.4	12.42	22 20.3	09 53.8
29	309 10 58.8	315 45 05.6	4 30 34.1	4 43 47.3	13.42	23 12.4	10 46.5
30	322 24 23.8	329 08 42.3	4 53 19.9	4 58 55.3	14.42	* *	11 37.9
31	335 57 43.1	342 51 01.9	5 00 19.8	4 57 23.8	15.42	00 03.0	12 27.8
32	349 48 09.4	356 48 32.4	S. 4 50 02.5	S. 4 38 15.9	16.42	00 52.3	13 16.6

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Wednesday 1.					Friday 3.				
	h m s		° ' "	"		h m s		° ' "	"
00	20 15 46.57	22.972	S. 23 56 47.6	54.51	00	22 03 34.28	21.824	S. 17 13 06.9	110.7
01	20 18 04.36	22.958	23 51 16.6	55.83	01	22 05 45.14	21.797	17 01 59.7	111.6
02	20 20 22.07	22.943	23 45 37.6	57.17	02	22 07 55.84	21.769	16 50 46.7	112.6
03	20 22 39.68	22.928	23 39 50.6	58.48	03	22 10 06.37	21.741	16 39 28.1	113.5
04	20 24 57.21	22.913	23 33 55.8	59.79	04	22 12 16.73	21.713	16 28 03.9	114.5
05	20 27 14.63	22.896	23 27 53.1	61.11	05	22 14 26.92	21.685	16 16 34.1	115.4
06	20 29 31.96	22.879	23 21 42.5	62.41	06	22 16 36.95	21.658	16 04 58.9	116.3
07	20 31 49.18	22.862	23 15 24.2	63.70	07	22 18 46.81	21.630	15 53 18.3	117.2
08	20 34 06.30	22.843	23 08 58.1	65.00	08	22 20 56.51	21.603	15 41 32.3	118.1
09	20 36 23.30	22.824	23 02 24.2	66.29	09	22 23 06.05	21.576	15 29 41.1	118.9
10	20 38 40.19	22.806	22 55 42.6	67.57	10	22 25 15.44	21.549	15 17 44.7	119.8
11	20 40 56.97	22.786	22 48 53.4	68.84	11	22 27 24.64	21.523	15 05 43.1	120.6
12	20 43 13.62	22.765	22 41 56.5	70.12	12	22 29 33.69	21.496	14 53 36.4	121.5
13	20 45 30.15	22.745	22 34 52.0	71.38	13	22 31 42.59	21.470	14 41 24.7	122.3
14	20 47 46.56	22.723	22 27 39.9	72.64	14	22 33 51.33	21.444	14 29 08.1	123.1
15	20 50 02.83	22.701	22 20 20.3	73.89	15	22 35 59.92	21.419	14 16 46.6	123.9
16	20 52 18.97	22.679	22 12 53.2	75.13	16	22 38 08.36	21.393	14 04 20.3	124.7
17	20 54 34.98	22.657	22 05 18.7	76.38	17	22 40 16.64	21.368	13 51 49.2	125.5
18	20 56 50.85	22.633	21 57 36.7	77.61	18	22 42 24.77	21.343	13 39 13.5	126.3
19	20 59 06.58	22.610	21 49 47.4	78.83	19	22 44 32.76	21.319	13 26 33.1	127.1
20	21 01 22.17	22.586	21 41 50.8	80.04	20	22 46 40.60	21.296	13 13 48.2	127.8
21	21 03 37.61	22.562	21 33 46.9	81.26	21	22 48 48.31	21.273	13 00 58.8	128.6
22	21 05 52.91	22.538	21 25 35.7	82.47	22	22 50 55.87	21.248	12 48 05.0	129.3
23	21 08 08.06	22.513	S. 21 17 17.3	83.66	23	22 53 03.29	21.225	S. 12 35 06.9	130.0
Thursday 2.					Saturday 4.				
00	21 10 23.06	22.488	S. 21 08 51.8	84.84	00	22 55 10.57	21.203	S. 12 22 04.5	130.75
01	21 12 37.91	22.462	21 00 19.2	86.03	01	22 57 17.72	21.181	12 08 57.9	131.44
02	21 14 52.60	22.435	20 51 39.5	87.19	02	22 59 24.74	21.159	11 55 47.2	132.13
03	21 17 07.13	22.409	20 42 52.9	88.36	03	23 01 31.63	21.138	11 42 32.4	132.79
04	21 19 21.51	22.383	20 33 59.2	89.52	04	23 03 38.39	21.117	11 29 13.7	133.45
05	21 21 35.73	22.356	20 24 58.7	90.66	05	23 05 45.03	21.097	11 15 51.0	134.10
06	21 23 49.78	22.329	20 15 51.3	91.80	06	23 07 51.55	21.077	11 02 24.5	134.73
07	21 26 03.68	22.303	20 06 37.1	92.93	07	23 09 57.95	21.058	10 48 54.2	135.36
08	21 28 17.41	22.275	19 57 16.1	94.05	08	23 12 04.24	21.038	10 35 20.2	135.97
09	21 30 30.98	22.248	19 47 48.5	95.16	09	23 14 10.41	21.019	10 21 42.6	136.58
10	21 32 44.38	22.219	19 38 14.2	96.27	10	23 16 16.47	21.001	10 08 01.3	137.17
11	21 34 57.61	22.192	19 28 33.3	97.37	11	23 18 22.42	20.983	9 54 16.6	137.73
12	21 37 10.68	22.164	19 18 45.8	98.45	12	23 20 28.27	20.967	9 40 28.5	138.30
13	21 39 23.58	22.136	19 08 51.9	99.53	13	23 22 34.02	20.950	9 26 37.0	138.86
14	21 41 36.31	22.108	18 58 51.5	100.59	14	23 24 39.67	20.934	9 12 42.2	139.40
15	21 43 48.87	22.079	18 48 44.8	101.65	15	23 26 45.23	20.918	8 58 44.2	139.93
16	21 46 01.26	22.051	18 38 31.7	102.70	16	23 28 50.69	20.903	8 44 43.1	140.44
17	21 48 13.48	22.023	18 28 12.4	103.73	17	23 30 56.07	20.889	8 30 38.9	140.94
18	21 50 25.54	21.995	18 17 46.9	104.76	18	23 33 01.36	20.875	8 16 31.8	141.43
19	21 52 37.42	21.966	18 07 15.3	105.78	19	23 35 06.57	20.862	8 02 21.7	141.92
20	21 54 49.13	21.938	17 56 37.5	106.79	20	23 37 11.70	20.849	7 48 08.7	142.39
21	21 57 00.67	21.910	17 45 53.8	107.79	21	23 39 16.76	20.838	7 33 53.0	142.84
22	21 59 12.05	21.882	17 35 04.0	108.78	22	23 41 21.75	20.825	7 19 34.6	143.29
23	22 01 23.25	21.853	17 24 08.4	109.76	23	23 43 26.66	20.814	7 05 13.5	143.73
24	22 03 34.28	21.824	S. 17 13 06.9	110.73	24	23 45 31.52	20.804	S. 6 50 49.9	144.14

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Sunday 5.					Tuesday 7.				
	h m s	s	° ' " "			h m s	s	° ' " "	
00	23 45 31.52	20.804	S. 6 50 49.9	144.14	00	01 25 28.27	21.118	N. 5 05 47.0	149.53
01	23 47 36.31	20.794	6 36 23.8	144.55	01	01 27 35.05	21.142	5 20 43.6	149.33
02	23 49 41.05	20.785	6 21 55.3	144.94	02	01 29 41.97	21.167	5 35 38.9	149.10
03	23 51 45.73	20.777	6 07 24.5	145.33	03	01 31 49.05	21.193	5 50 32.8	148.87
04	23 53 50.37	20.769	5 52 51.4	145.70	04	01 33 56.29	21.220	6 05 25.3	148.62
05	23 55 54.96	20.762	5 38 16.1	146.07	05	01 36 03.69	21.248	6 20 16.2	148.35
06	23 57 59.51	20.755	5 23 38.6	146.42	06	01 38 11.27	21.277	6 35 05.5	148.08
07	00 00 04.02	20.749	5 08 59.1	146.74	07	01 40 19.01	21.305	6 49 53.1	147.79
08	00 02 08.50	20.744	4 54 17.7	147.07	08	01 42 26.93	21.335	7 04 39.0	147.49
09	00 04 12.95	20.739	4 39 34.3	147.38	09	01 44 35.03	21.366	7 19 23.0	147.17
10	00 06 17.37	20.735	4 24 49.2	147.67	10	01 46 43.32	21.397	7 34 05.0	146.83
11	00 08 21.77	20.732	4 10 02.3	147.96	11	01 48 51.79	21.428	7 48 44.9	146.48
12	00 10 26.15	20.729	3 55 13.7	148.23	12	01 51 00.46	21.462	8 03 22.8	146.13
13	00 12 30.52	20.728	3 40 23.5	148.49	13	01 53 09.33	21.495	8 17 58.5	145.75
14	00 14 34.88	20.727	3 25 31.8	148.73	14	01 55 18.40	21.529	8 32 31.8	145.36
15	00 16 39.24	20.726	3 10 38.7	148.97	15	01 57 27.68	21.564	8 47 02.8	144.97
16	00 18 43.59	20.726	2 55 44.2	149.19	16	01 59 37.17	21.600	9 01 31.4	144.55
17	00 20 47.95	20.727	2 40 48.4	149.41	17	02 01 46.88	21.636	9 15 57.4	144.12
18	00 22 52.31	20.728	2 25 51.3	149.61	18	02 03 56.80	21.673	9 30 20.8	143.67
19	00 24 56.68	20.730	2 10 53.1	149.78	19	02 06 06.95	21.711	9 44 41.4	143.20
20	00 27 01.07	20.733	1 55 53.9	149.96	20	02 08 17.33	21.749	9 58 59.2	142.73
21	00 29 05.48	20.738	1 40 53.6	150.12	21	02 10 27.94	21.788	10 13 14.2	142.24
22	00 31 09.92	20.742	1 25 52.5	150.26	22	02 12 38.79	21.828	10 27 26.1	141.73
23	00 33 14.38	20.747	S. 1 10 50.5	150.40	23	02 14 49.88	21.868	N. 10 41 35.0	141.22
Monday 6.					Wednesday 8.				
00	00 35 18.88	20.753	S. 0 55 47.7	150.53	00	02 17 01.21	21.909	N. 10 55 40.7	140.68
01	00 37 23.41	20.759	0 40 44.2	150.63	01	02 19 12.79	21.951	11 09 43.2	140.14
02	00 39 27.99	20.767	0 25 40.2	150.72	02	02 21 24.62	21.993	11 23 42.4	139.58
03	00 41 32.61	20.774	S. 0 10 35.6	150.81	03	02 23 36.71	22.037	11 37 38.1	138.99
04	00 43 37.28	20.783	N. 0 04 29.5	150.88	04	02 25 49.06	22.080	11 51 30.3	138.40
05	00 45 42.01	20.793	0 19 35.0	150.93	05	02 28 01.67	22.124	12 05 18.9	137.80
06	00 47 46.80	20.803	0 34 40.7	150.98	06	02 30 14.55	22.169	12 19 03.9	137.18
07	00 49 51.65	20.814	0 49 46.7	151.02	07	02 32 27.70	22.214	12 32 45.0	136.53
08	00 51 56.57	20.826	1 04 52.9	151.03	08	02 34 41.12	22.260	12 46 22.3	135.88
09	00 54 01.56	20.838	1 19 59.1	151.03	09	02 36 54.82	22.307	12 59 55.6	135.22
10	00 56 06.63	20.852	1 35 05.3	151.03	10	02 39 08.80	22.354	13 13 24.9	134.53
11	00 58 11.78	20.866	1 50 11.4	151.00	11	02 41 23.07	22.402	13 26 50.0	133.83
12	01 00 17.02	20.881	2 05 17.3	150.97	12	02 43 37.62	22.449	13 40 10.9	133.12
13	01 02 22.35	20.896	2 20 23.0	150.93	13	02 45 52.46	22.498	13 53 27.5	132.39
14	01 04 27.77	20.913	2 35 28.4	150.86	14	02 48 07.60	22.548	14 06 39.6	131.65
15	01 06 33.30	20.930	2 50 33.3	150.78	15	02 50 23.03	22.598	14 19 47.3	130.89
16	01 08 38.93	20.947	3 05 37.8	150.71	16	02 52 38.77	22.648	14 32 50.3	130.12
17	01 10 44.66	20.965	3 20 41.8	150.61	17	02 54 54.81	22.698	14 45 48.7	129.33
18	01 12 50.51	20.985	3 35 45.1	150.49	18	02 57 11.15	22.749	14 58 42.3	128.53
19	01 14 56.48	21.006	3 50 47.7	150.37	19	02 59 27.80	22.801	15 11 31.0	127.70
20	01 17 02.58	21.027	4 05 49.5	150.23	20	03 01 44.76	22.853	15 24 14.7	126.86
21	01 19 08.80	21.048	4 20 50.4	150.07	21	03 04 02.03	22.905	15 36 53.3	126.01
22	01 21 15.15	21.070	4 35 50.3	149.90	22	03 06 19.62	22.958	15 49 26.8	125.15
23	01 23 21.64	21.093	4 50 49.2	149.73	23	03 08 37.52	23.011	16 01 55.1	124.27
24	01 25 28.27	21.118	N. 5 05 47.0	149.53	24	03 10 55.75	23.065	N. 16 14 18.0	123.37

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 9.					Saturday 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	03 10 55.75	23.065	N. 16 14 18.0	123.37	00	05 07 57.22	25.604	N. 23 53 56.7	62.59
01	03 13 14.30	23.118	16 26 35.5	122.45	01	05 10 30.97	25.645	24 00 07.5	60.99
02	03 15 33.17	23.173	16 38 47.4	121.53	02	05 13 04.96	25.686	24 06 08.6	59.38
03	03 17 52.37	23.228	16 50 53.8	120.58	03	05 15 39.20	25.725	24 12 00.1	57.77
04	03 20 11.90	23.282	17 02 54.4	119.62	04	05 18 13.66	25.763	24 17 41.9	56.14
05	03 22 31.75	23.337	17 14 49.2	118.64	05	05 20 48.36	25.801	24 23 13.8	54.51
06	03 24 51.94	23.393	17 26 38.1	117.65	06	05 23 23.27	25.836	24 28 36.0	52.87
07	03 27 12.46	23.448	17 38 21.0	116.64	07	05 25 58.39	25.872	24 33 48.2	51.20
08	03 29 33.31	23.503	17 49 57.8	115.62	08	05 28 33.73	25.906	24 38 50.4	49.54
09	03 31 54.50	23.559	18 01 28.4	114.58	09	05 31 09.26	25.938	24 43 42.7	47.87
10	03 34 16.02	23.615	18 12 52.8	113.53	10	05 33 44.98	25.969	24 48 24.9	46.18
11	03 36 37.88	23.671	18 24 10.8	112.46	11	05 36 20.89	26.000	24 52 56.9	44.49
12	03 39 00.07	23.727	18 35 22.3	111.38	12	05 38 56.98	26.029	24 57 18.8	42.80
13	03.41.22.60	23.783	18 46 27.3	110.28	13	05 41 33.24	26.058	25 01 30.5	41.09
14	03 43 45.47	23.840	18 57 25.6	109.16	14	05 44 09.67	26.084	25 05 31.9	39.38
15	03 46 08.68	23.897	19 08 17.2	108.03	15	05 46 46.25	26.109	25 09 23.1	37.67
16	03 48 32.23	23.953	19 19 02.0	106.88	16	05 49 22.98	26.133	25 13 03.9	35.93
17	03 50 56.12	24.009	19 29 39.8	105.72	17	05 51 59.84	26.155	25 16 34.3	34.20
18	03 53 20.34	24.066	19 40 10.6	104.54	18	05 54 36.84	26.177	25 19 54.3	32.46
19	03 55 44.91	24.123	19 50 34.3	103.35	19	05 57 13.96	26.197	25 23 03.8	30.73
20	03 58 09.81	24.178	20 00 50.8	102.14	20	05 59 51.20	26.216	25 26 03.0	28.98
21	04 00 35.05	24.234	20 11 00.0	100.92	21	06 02 28.55	26.233	25 28 51.6	27.22
22	04 03 00.62	24.290	20 21 01.8	99.68	22	06 05 05.99	26.248	25 31 29.6	25.47
23	04 05 26.53	24.347	N. 20 30 56.2	98.43	23	06 07 43.52	26.263	N. 25 33 57.2	23.71
Friday 10.					Sunday 12.				
00	04 07 52.78	24.403	N. 20 40 43.0	97.17	00	06 10 21.14	26.276	N. 25 36 14.1	21.93
01	04 10 19.36	24.458	20 50 22.2	95.88	01	06 12 58.83	26.287	25 38 20.4	20.17
02	04 12 46.27	24.513	20 59 53.6	94.58	02	06 15 36.58	26.297	25 40 16.1	18.39
03	04 15 13.52	24.568	21 09 17.2	93.27	03	06 18 14.39	26.306	25 42 01.1	16.62
04	04 17 41.09	24.623	21 18 32.9	91.94	04	06 20 52.25	26.313	25 43 35.5	14.84
05	04 20 08.99	24.677	21 27 40.5	90.60	05	06 23 30.14	26.317	25 44 59.2	13.07
06	04 22 37.21	24.730	21 36 40.1	89.25	06	06 26 08.05	26.321	25 46 12.3	11.29
07	04 25 05.75	24.783	21 45 31.5	87.88	07	06 28 45.99	26.324	25 47 14.7	09.51
08	04 27 34.61	24.837	21 54 14.6	86.49	08	06 31 23.94	26.324	25 48 06.4	07.73
09	04 30 03.79	24.890	22 02 49.4	85.10	09	06 34 01.88	26.323	25 48 47.4	05.94
10	04 32 33.29	24.942	22 11 15.8	83.69	10	06 36 39.82	26.322	25 49 17.7	04.17
11	04 35 03.09	24.993	22 19 33.7	82.27	11	06 39 17.74	26.318	25 49 37.4	02.38
12	04 37 33.21	25.045	22 27 43.0	80.83	12	06 41 55.64	26.313	25 49 46.3	00.60
13	04 40 03.63	25.095	22 35 43.6	79.38	13	06 44 33.50	26.306	25 49 44.6	01.18
14	04 42 34.35	25.145	22 43 35.5	77.92	14	06 47 11.31	26.298	25 49 32.1	02.97
15	04 45 05.37	25.194	22 51 18.6	76.44	15	06 49 49.07	26.288	25 49 09.0	04.74
16	04 47 36.68	25.243	22 58 52.8	74.94	16	06 52 26.76	26.276	25 48 35.2	06.51
17	04 50 08.28	25.291	23 06 17.9	73.43	17	06 55 04.38	26.263	25 47 50.9	08.28
18	04 52 40.17	25.338	23 13 34.0	71.93	18	06 57 41.92	26.248	25 46 55.9	10.05
19	04 55 12.34	25.384	23 20 41.0	70.40	19	07 00 19.36	26.233	25 45 50.3	11.82
20	04 57 44.78	25.430	23 27 38.8	68.87	20	07 02 56.71	26.216	25 44 34.1	13.58
21	05 00 17.50	25.475	23 34 27.4	67.32	21	07 05 33.95	26.196	25 43 07.4	15.33
22	05 02 50.48	25.518	23 41 06.6	65.75	22	07 08 11.06	26.175	25 41 30.1	17.08
23	05 05 23.72	25.562	23 47 36.4	64.18	23	07 10 48.05	26.154	25 39 42.4	18.83
24	05 07 57.22	25.604	N. 23 53 56.7	62.59	24	07 13 24.91	26.131	N. 25 37 44.1	20.58

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Monday 13.					Wednesday 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	07 13 24.91	26.131	N. 25 37 44.1	20.58	00	09 13 50.46	23.702	N. 20 55 50.6	92.15
01	07 16 01.62	26.106	25 35 35.5	22.31	01	09 16 12.47	23.635	20 46 34.2	93.30
02	07 18 38.18	26.079	25 33 16.4	24.05	02	09 18 34.08	23.568	20 37 11.0	94.43
03	07 21 14.57	26.052	25 30 46.9	25.77	03	09 20 55.29	23.501	20 27 41.0	95.56
04	07 23 50.80	26.023	25 28 07.2	27.48	04	09 23 16.09	23.433	20 18 04.3	96.67
05	07 26 26.84	25.992	25 25 17.1	29.20	05	09 25 36.49	23.366	20 08 21.0	97.75
06	07 29 02.70	25.960	25 22 16.8	30.90	06	09 27 56.48	23.298	19 58 31.5	98.82
07	07 31 38.36	25.927	25 19 06.3	32.59	07	09 30 16.07	23.231	19 48 35.2	99.88
08	07 34 13.82	25.893	25 15 45.7	34.28	08	09 32 35.25	23.163	19 38 32.7	100.92
09	07 36 49.07	25.856	25 12 15.0	35.95	09	09 34 54.03	23.096	19 28 24.1	101.94
10	07 39 24.09	25.818	25 08 34.3	37.63	10	09 37 12.40	23.028	19 18 09.4	102.95
11	07 41 58.89	25.781	25 04 43.5	39.29	11	09 39 30.36	22.960	19 07 48.7	103.95
12	07 44 33.46	25.742	25 00 42.8	40.94	12	09 41 47.92	22.893	18 57 22.0	104.93
13	07 47 07.79	25.700	24 56 32.2	42.58	13	09 44 05.08	22.825	18 46 49.6	105.88
14	07 49 41.86	25.658	24 52 11.8	44.22	14	09 46 21.82	22.758	18 36 11.4	106.83
15	07 52 15.68	25.614	24 47 41.6	45.83	15	09 48 38.17	22.691	18 25 27.6	107.76
16	07 54 49.23	25.569	24 43 01.8	47.44	16	09 50 54.11	22.623	18 14 38.3	108.67
17	07 57 22.51	25.524	24 38 12.3	49.05	17	09 53 09.65	22.557	18 03 43.6	109.57
18	07 59 55.52	25.478	24 33 13.2	50.63	18	09 55 24.79	22.489	17 52 43.5	110.45
19	08 02 28.24	25.429	24 28 04.7	52.21	19	09 57 39.52	22.423	17 41 38.2	111.32
20	08 05 00.67	25.381	24 22 46.7	53.78	20	09 59 53.86	22.357	17 30 27.7	112.17
21	08 07 32.81	25.332	24 17 19.4	55.33	21	10 02 07.80	22.291	17 19 12.2	113.00
22	08 10 04.65	25.281	24 11 42.7	56.88	22	10 04 21.35	22.225	17 07 51.7	113.82
23	08 12 36.18	25.228	N. 24 05 56.8	58.41	23	10 06 34.50	22.158	N. 16 56 26.4	114.62
Tuesday 14.					Thursday 16.				
00	08 15 07.39	25.176	N. 24 00 01.8	59.93	00	10 08 47.25	22.093	N. 16 44 56.3	115.41
01	08 17 38.29	25.123	23 53 57.7	61.43	01	10 10 59.62	22.028	16 33 21.5	116.18
02	08 20 08.86	25.067	23 47 44.6	62.93	02	10 13 11.59	21.963	16 21 42.2	116.93
03	08 22 39.09	25.012	23 41 22.6	64.40	03	10 15 23.18	21.899	16 09 58.4	117.68
04	08 25 09.00	24.956	23 34 51.8	65.87	04	10 17 34.38	21.836	15 58 10.1	118.40
05	08 27 38.56	24.898	23 28 12.2	67.33	05	10 19 45.21	21.773	15 46 17.6	119.10
06	08 30 07.78	24.841	23 21 23.9	68.76	06	10 21 55.65	21.708	15 34 20.9	119.80
07	08 32 36.65	24.782	23 14 27.1	70.18	07	10 24 05.71	21.645	15 22 20.0	120.48
08	08 35 05.16	24.723	23 07 21.7	71.60	08	10 26 15.40	21.583	15 10 15.1	121.15
09	08 37 33.32	24.663	23 00 07.9	72.99	09	10 28 24.71	21.521	14 58 06.2	121.80
10	08 40 01.12	24.603	22 52 45.8	74.38	10	10 30 33.65	21.459	14 45 53.5	122.43
11	08 42 28.55	24.541	22 45 15.4	75.74	11	10 32 42.22	21.398	14 33 37.1	123.05
12	08 44 55.61	24.479	22 37 36.9	77.09	12	10 34 50.43	21.338	14 21 16.9	123.66
13	08 47 22.30	24.417	22 29 50.3	78.43	13	10 36 58.28	21.278	14 08 55.2	124.25
14	08 49 48.61	24.353	22 21 55.7	79.76	14	10 39 05.77	21.218	13 56 25.9	124.83
15	08 52 14.54	24.290	22 13 53.2	81.07	15	10 41 12.90	21.158	13 43 55.3	125.38
16	08 54 40.09	24.227	22 05 42.9	82.36	16	10 43 19.67	21.100	13 31 21.3	125.93
17	08 57 05.26	24.162	21 57 24.9	83.63	17	10 45 26.10	21.043	13 18 44.1	126.46
18	08 59 30.03	24.097	21 48 59.3	84.90	18	10 47 32.18	20.985	13 06 03.8	126.98
19	09 01 54.42	24.033	21 40 26.1	86.15	19	10 49 37.92	20.928	12 53 20.3	127.49
20	09 04 18.42	23.968	21 31 45.5	87.38	20	10 51 43.32	20.872	12 40 33.9	127.98
21	09 06 42.03	23.902	21 22 57.6	88.59	21	10 53 48.38	20.815	12 27 41.6	128.46
22	09 09 05.24	23.835	21 14 02.4	89.80	22	10 55 53.10	20.759	12 14 52.4	128.93
23	09 11 28.05	23.768	21 05 00.0	90.98	23	10 57 57.49	20.705	12 01 57.5	129.38
24	09 13 50.46	23.702	N. 20 55 50.6	92.15	24	11 00 01.56	20.651	N. 11 48 59.9	129.82

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
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Friday 17.

	h	m	s	s		°	'	"	"
00	11	00	01.56	20.651	N.	11	48	59.9	129.82
01	11	02	05.30	20.598		11	35	59.7	130.23
02	11	04	08.73	20.544		11	22	57.1	130.64
03	11	06	11.83	20.492		11	09	52.0	131.04
04	11	08	14.63	20.440		10	56	44.6	131.43
05	11	10	17.11	20.388		10	43	34.9	131.79
06	11	12	19.29	20.338		10	30	23.1	132.15
07	11	14	21.17	20.289		10	17	09.1	132.50
08	11	16	22.76	20.239		10	03	53.1	132.83
09	11	18	24.04	20.190		9	50	35.1	133.16
10	11	20	25.04	20.143		9	37	15.2	133.47
11	11	22	25.75	20.095		9	23	53.5	133.76
12	11	24	26.18	20.048		9	10	30.1	134.04
13	11	26	26.33	20.003		8	57	05.0	134.32
14	11	28	26.21	19.958		8	43	38.3	134.58
15	11	30	25.82	19.913		8	30	10.1	134.82
16	11	32	25.16	19.868		8	16	40.5	135.05
17	11	34	24.24	19.825		8	03	09.5	135.28
18	11	36	23.06	19.783		7	49	37.1	135.50
19	11	38	21.63	19.741		7	36	03.5	135.69
20	11	40	19.95	19.699		7	22	28.8	135.88
21	11	42	18.02	19.659		7	08	52.9	136.07
22	11	44	15.86	19.619		6	55	16.0	136.23
23	11	46	13.45	19.579	N.	6	41	38.2	136.38

Saturday 18.

00	11	48	10.81	19.541	N.	6	27	59.4	136.53
01	11	50	07.94	19.503		6	14	19.8	136.67
02	11	52	04.85	19.467		6	00	39.4	136.79
03	11	54	01.54	19.430		5	46	58.3	136.90
04	11	55	58.01	19.394		5	33	16.6	137.01
05	11	57	54.27	19.358		5	19	34.2	137.10
06	11	59	50.31	19.324		5	05	51.4	137.18
07	12	01	46.16	19.292		4	52	08.1	137.26
08	12	03	41.81	19.258		4	38	24.3	137.32
09	12	05	37.26	19.226		4	24	40.3	137.37
10	12	07	32.52	19.194		4	10	55.9	137.42
11	12	09	27.59	19.163		3	57	11.3	137.44
12	12	11	22.48	19.133		3	43	26.6	137.46
13	12	13	17.19	19.104		3	29	41.8	137.48
14	12	15	11.73	19.076		3	15	56.9	137.48
15	12	17	06.10	19.048		3	02	12.0	137.48
16	12	19	00.31	19.021		2	48	27.2	137.45
17	12	20	54.35	18.994		2	34	42.6	137.43
18	12	22	48.24	18.968		2	20	58.1	137.40
19	12	24	41.97	18.943		2	07	13.8	137.36
20	12	26	35.55	18.918		1	53	29.8	137.30
21	12	28	28.99	18.895		1	39	46.2	137.23
22	12	30	22.29	18.873		1	26	03.0	137.17
23	12	32	15.46	18.850		1	52	20.2	137.09
24	12	34	08.49	18.828	N.	0	18	37.9	137.00

Sunday 19.

	h	m	s	s	°	'	"	"	
00	12	34	08.49	18.828	N.	0	58	37.9	137.00
01	12	36	01.39	18.808		0	44	56.2	136.91
02	12	37	54.18	18.788		0	31	15.0	136.80
03	12	39	46.84	18.768		0	17	34.6	136.68
04	12	41	39.39	18.749	N.	0	03	54.8	136.57
05	12	43	31.83	18.731	S.	0	09	44.2	136.43
06	12	45	24.16	18.713		0	23	22.3	136.29
07	12	47	16.39	18.698		0	36	59.7	136.15
08	12	49	08.53	18.681		0	50	36.1	135.98
09	12	51	00.56	18.665		1	04	11.5	135.83
10	12	52	52.51	18.652		1	17	46.0	135.66
11	12	54	44.38	18.638		1	31	19.4	135.48
12	12	56	36.16	18.624		1	44	51.7	135.28
13	12	58	27.87	18.612		1	58	22.8	135.09
14	13	00	19.50	18.600		2	11	52.8	134.89
15	13	02	11.07	18.589		2	25	21.5	134.68
16	13	04	02.57	18.578		2	38	48.9	134.46
17	13	05	54.01	18.568		2	52	15.0	134.23
18	13	07	45.39	18.559		3	05	39.7	134.00
19	13	09	36.72	18.551		3	19	03.0	133.76
20	13	11	28.00	18.543		3	32	24.8	133.50
21	13	13	19.24	18.537		3	45	45.0	133.25
22	13	15	10.44	18.530		3	59	03.8	132.99
23	13	17	01.60	18.524	S.	4	12	20.9	132.71

Monday 20.

00	13	18	52.73	18.519	S.	4	25	36.3	132.43
01	13	20	43.83	18.515		4	38	50.1	132.15
02	13	22	34.91	18.512		4	52	02.1	131.85
03	13	24	25.97	18.508		5	05	12.3	131.56
04	13	26	17.01	18.506		5	18	20.8	131.25
05	13	28	08.04	18.505		5	31	27.3	130.93
06	13	29	59.07	18.503		5	44	32.0	130.62
07	13	31	50.08	18.503		5	57	34.7	130.29
08	13	33	41.10	18.503		6	10	35.5	129.96
09	13	35	32.12	18.504		6	23	34.2	129.61
10	13	37	23.15	18.506		6	36	30.8	129.26
11	13	39	14.19	18.508		6	49	25.3	128.90
12	13	41	05.25	18.512		7	02	17.6	128.53
13	13	42	56.33	18.514		7	15	07.7	128.17
14	13	44	47.42	18.518		7	27	55.6	127.80
15	13	46	38.55	18.523		7	40	41.3	127.42
16	13	48	29.70	18.528		7	53	24.6	127.02
17	13	50	20.89	18.535		8	06	05.5	126.62
18	13	52	12.12	18.542		8	18	44.0	126.22
19	13	54	03.39	18.548		8	31	20.1	125.81
20	13	55	54.70	18.557		8	43	53.7	125.38
21	13	57	46.07	18.565		8	56	24.7	124.96
22	13	59	37.48	18.574		9	08	53.2	124.53
23	14	01	28.96	18.584		9	21	19.1	124.10
24	14	03	20.49	18.594	S.	9	33	42.4	123.66

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Tuesday 21.					Thursday 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	14 03 20.49	18.594	S. 9 33 42.4	123.66	00	15 34 50.94	19.726	S. 18 23 29.8	94.53
01	14 05 12.09	18.605	9 46 03.0	123.20	01	15 36 49.40	19.760	18 32 54.6	93.74
02	14 07 03.75	18.617	9 58 20.8	122.74	02	15 38 48.06	19.794	18 42 14.7	92.97
03	14 08 55.49	18.629	10 10 35.9	122.28	03	15 40 46.93	19.830	18 51 30.2	92.18
04	14 10 47.50	18.642	10 22 48.2	121.81	04	15 42 46.02	19.866	19 00 40.9	91.38
05	14 12 39.19	18.655	10 34 57.6	121.33	05	15 44 45.32	19.901	19 09 46.8	90.58
06	14 14 31.16	18.669	10 47 04.2	120.85	06	15 46 44.83	19.938	19 18 47.9	89.78
07	14 16 23.22	18.684	10 59 07.8	120.36	07	15 48 44.57	19.974	19 27 44.1	88.95
08	14 18 15.37	18.699	11 11 08.5	119.86	08	15 50 44.52	20.010	19 36 35.3	88.13
09	14 20 07.61	18.714	11 23 06.1	119.36	09	15 52 44.69	20.048	19 45 21.6	87.30
10	14 21 59.94	18.730	11 35 00.8	118.85	10	15 54 45.09	20.085	19 54 02.9	86.46
11	14 23 52.37	18.748	11 46 52.3	118.33	11	15 56 45.71	20.122	20 02 39.1	85.62
12	14 25 44.91	18.765	11 58 40.7	117.80	12	15 58 46.55	20.159	20 11 10.3	84.77
13	14 27 37.55	18.783	12 10 25.9	117.28	13	16 00 47.62	20.198	20 19 36.3	83.91
14	14 29 30.30	18.802	12 22 08.0	116.74	14	16 02 48.92	20.236	20 27 57.2	83.04
15	14 31 23.17	18.821	12 33 46.8	116.20	15	16 04 50.45	20.275	20 36 12.8	82.16
16	14 33 16.15	18.840	12 45 22.4	115.65	16	16 06 52.22	20.313	20 44 23.1	81.28
17	14 35 09.25	18.860	12 56 54.6	115.09	17	16 08 54.21	20.352	20 52 28.2	80.39
18	14 37 02.47	18.881	13 08 23.5	114.53	18	16 10 56.44	20.391	21 00 27.8	79.49
19	14 38 55.82	18.903	13 19 49.0	113.96	19	16 12 58.90	20.430	21 08 22.1	78.60
20	14 40 49.30	18.924	13 31 11.0	113.38	20	16 15 01.60	20.469	21 16 11.0	77.68
21	14 42 42.91	18.946	13 42 29.6	112.80	21	16 17 04.53	20.508	21 23 54.3	76.76
22	14 44 36.65	18.969	13 53 44.6	112.21	22	16 19 07.70	20.548	21 31 32.1	75.84
23	14 46 30.54	18.993	S. 14 04 56.1	111.62	23	16 21 11.11	20.588	S. 21 39 04.4	74.91
Wednesday 22.					Friday 24.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	14 48 24.56	19.016	S. 14 16 04.0	111.02	00	16 23 14.75	20.627	S. 21 46 31.0	73.96
01	14 50 18.73	19.041	14 27 08.3	110.41	01	16 25 18.63	20.668	21 53 51.9	73.02
02	14 52 13.05	19.065	14 38 08.9	109.78	02	16 27 22.76	20.708	22 01 07.2	72.07
03	14 54 07.51	19.090	14 49 05.7	109.16	03	16 29 27.13	20.748	22 08 16.7	71.09
04	14 56 02.13	19.117	14 59 58.8	108.54	04	16 31 31.74	20.788	22 15 20.3	70.13
05	14 57 56.91	19.143	15 10 48.2	107.91	05	16 33 36.58	20.828	22 22 18.2	69.15
06	14 59 51.84	19.169	15 21 33.7	107.26	06	16 35 41.67	20.866	22 29 10.1	68.16
07	15 01 46.94	19.197	15 32 15.3	106.61	07	16 37 47.00	20.908	22 35 56.1	67.18
08	15 03 42.20	19.224	15 42 53.0	105.95	08	16 39 52.57	20.948	22 42 36.2	66.18
09	15 05 37.63	19.253	15 53 26.7	105.28	09	16 41 58.38	20.988	22 49 10.2	65.16
10	15 07 33.23	19.281	16 03 56.4	104.62	10	16 44 04.43	21.029	22 55 38.1	64.15
11	15 09 29.00	19.310	16 14 22.1	103.94	11	16 46 10.73	21.069	23 02 00.0	63.13
12	15 11 24.95	19.340	16 24 43.7	103.26	12	16 48 17.26	21.109	23 08 15.7	62.10
13	15 13 21.08	19.369	16 35 01.2	102.57	13	16 50 24.04	21.149	23 14 25.2	61.07
14	15 15 17.38	19.399	16 45 14.5	101.87	14	16 52 31.05	21.189	23 20 28.5	60.03
15	15 17 13.87	19.431	16 55 23.6	101.17	15	16 54 38.31	21.229	23 26 25.5	58.97
16	15 19 10.55	19.462	17 05 28.5	100.46	16	16 56 45.80	21.269	23 32 16.1	57.91
17	15 21 07.41	19.493	17 15 29.1	99.74	17	16 58 53.54	21.309	23 38 00.4	56.85
18	15 23 04.47	19.526	17 25 25.4	99.02	18	17 01 01.51	21.348	23 43 38.3	55.78
19	15 25 01.72	19.558	17 35 17.3	98.28	19	17 03 09.72	21.388	23 49 09.7	54.69
20	15 26 59.16	19.590	17 45 04.8	97.54	20	17 05 18.17	21.428	23 54 34.6	53.61
21	15 28 56.80	19.624	17 54 47.8	96.79	21	17 07 26.85	21.467	23 59 53.0	52.52
22	15 30 54.65	19.658	18 04 26.3	96.04	22	17 09 35.77	21.506	24 05 04.8	51.41
23	15 32 52.69	19.691	18 14 00.3	95.29	23	17 11 44.92	21.544	24 10 09.9	50.30
24	15 34 50.94	19.726	S. 18 23 29.8	94.53	24	17 13 54.30	21.583	S. 24 15 08.4	49.19

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Saturday 25.					Monday 27.				
	h m s		° ' "			h m s		° ' "	
00	17 13 54.30	21.583	S. 24 15 08.4	49.19	00	19 01 14.53	22.940	S. 25 50 49.1	11.33
01	17 16 03.91	21.622	24 20 00.2	48.07	01	19 03 32.21	22.954	25 49 37.0	12.69
02	17 18 13.76	21.660	24 24 45.2	46.93	02	19 05 49.93	22.967	25 48 16.8	14.06
03	17 20 23.83	21.698	24 29 23.4	45.79	03	19 08 07.81	22.978	25 46 48.3	15.43
04	17 22 34.13	21.735	24 33 54.7	44.65	04	19 10 25.72	22.990	25 45 11.6	16.81
05	17 24 44.65	21.773	24 38 19.2	43.51	05	19 12 43.69	23.001	25 43 26.6	18.18
06	17 26 55.40	21.810	24 42 36.8	42.35	06	19 15 01.73	23.011	25 41 33.4	19.55
07	17 29 06.37	21.847	24 46 47.4	41.18	07	19 17 19.82	23.019	25 39 32.0	20.93
08	17 31 17.56	21.883	24 50 51.0	40.02	08	19 19 37.96	23.028	25 37 22.3	22.30
09	17 33 28.96	21.918	24 54 47.6	38.84	09	19 21 56.15	23.036	25 35 04.4	23.68
10	17 35 40.58	21.955	24 58 37.1	37.66	10	19 24 14.39	23.043	25 32 38.1	25.07
11	17 37 52.42	21.991	25 02 19.5	36.47	11	19 26 32.66	23.048	25 30 03.6	26.44
12	17 40 04.47	22.026	25 05 54.7	35.28	12	19 28 50.97	23.054	25 27 20.8	27.83
13	17 42 16.73	22.060	25 09 22.8	34.08	13	19 31 09.31	23.058	25 24 29.7	29.21
14	17 44 29.19	22.094	25 12 43.6	32.86	14	19 33 27.67	23.062	25 21 50.3	30.58
15	17 46 41.86	22.128	25 15 57.1	31.64	15	19 35 46.05	23.065	25 18 22.7	31.97
16	17 48 54.75	22.162	25 19 03.3	30.43	16	19 38 04.45	23.068	25 15 06.7	33.35
17	17 51 07.80	22.195	25 22 02.2	29.20	17	19 40 22.87	23.070	25 11 42.5	34.73
18	17 53 21.07	22.228	25 24 53.7	27.96	18	19 42 41.29	23.071	25 08 10.0	36.11
19	17 55 34.53	22.259	25 27 37.7	26.72	19	19 44 59.72	23.071	25 04 29.2	37.48
20	17 57 48.18	22.291	25 30 14.3	25.48	20	19 47 18.14	23.070	25 00 40.2	38.87
21	18 00 02.03	22.323	25 32 43.5	24.23	21	19 49 36.56	23.070	24 56 42.8	40.25
22	18 02 16.05	22.353	25 35 05.1	22.97	22	19 51 54.98	23.068	24 52 37.2	41.62
23	18 04 30.25	22.383	S. 25 37 19.1	21.71	23	19 54 13.38	23.065	S. 24 48 25.4	42.99
Sunday 26.					Tuesday 28.				
	h m s		° ' "			h m s		° ' "	
00	18 06 44.64	22.413	S. 25 39 25.6	20.44	00	19 56 31.76	23.062	S. 24 44 01.3	44.37
01	18 08 59.21	22.442	25 41 24.4	19.17	01	19 58 50.12	23.058	24 39 31.0	45.73
02	18 11 13.94	22.470	25 43 15.6	17.89	02	20 01 08.46	23.053	24 34 54.5	47.11
03	18 13 28.85	22.498	25 44 59.1	16.61	03	20 03 26.76	23.048	24 30 05.7	48.48
04	18 15 43.92	22.526	25 46 34.9	15.32	04	20 05 45.04	23.043	24 25 10.8	49.84
05	18 17 59.16	22.553	25 48 02.9	14.02	05	20 08 03.27	23.035	24 20 07.6	51.21
06	18 20 14.55	22.578	25 49 23.1	12.73	06	20 10 21.46	23.028	24 14 56.3	52.56
07	18 22 30.10	22.604	25 50 55.6	11.43	07	20 12 39.61	23.021	24 09 36.9	53.92
08	18 24 45.80	22.629	25 51 40.2	10.12	08	20 14 57.71	23.012	24 04 09.3	55.28
09	18 27 01.65	22.653	25 52 37.0	08.80	09	20 17 15.75	23.003	23 58 55.6	56.63
10	18 29 17.64	22.678	25 53 25.8	07.48	10	20 19 33.74	22.993	23 53 49.8	57.98
11	18 31 33.78	22.701	25 54 06.8	06.17	11	20 21 51.67	22.983	23 48 57.9	59.32
12	18 33 50.05	22.723	25 54 39.8	04.84	12	20 24 09.54	22.973	23 44 08.0	60.66
13	18 36 06.46	22.743	25 55 04.9	03.51	13	20 26 27.34	22.960	23 38 50.0	61.99
14	18 38 22.99	22.766	25 55 21.9	02.18	14	20 28 45.06	22.948	23 33 34.1	63.33
15	18 40 39.65	22.787	25 55 31.0	00.85	15	20 31 02.71	22.935	23 28 10.1	64.66
16	18 42 56.43	22.806	25 55 32.1	00.49	16	20 33 20.28	22.922	23 22 58.2	65.98
17	18 45 13.32	22.825	25 55 25.1	01.84	17	20 35 37.77	22.908	23 08 58.4	67.30
18	18 47 30.33	22.844	25 55 10.0	03.18	18	20 37 55.18	22.894	23 02 10.6	68.62
19	18 49 47.45	22.863	25 54 46.9	04.53	19	20 40 12.50	22.880	22 55 15.0	69.92
20	18 52 04.68	22.879	25 54 15.6	05.89	20	20 42 29.74	22.865	22 48 11.6	71.23
21	18 54 22.00	22.895	25 53 36.2	07.24	21	20 44 46.88	22.848	22 41 00.3	72.53
22	18 56 39.42	22.911	25 52 48.7	08.60	22	20 47 05.92	22.832	22 33 41.2	73.83
23	18 58 56.93	22.926	25 51 53.0	09.97	23	20 49 20.86	22.815	22 26 14.4	75.11
24	19 01 14.53	22.940	S. 25 50 49.1	11.33	24	20 51 37.70	22.798	S. 22 18 39.9	76.39

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
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Wednesday 29.

	h	m	s	s	o	"	"
00	20	51	37	70	22	798	S. 22 18 39.9
01	20	53	54	44	22	781	22 10 57.7
02	20	56	11	07	22	763	22 03 07.9
03	20	58	27	59	22	744	21 55 10.4
04	21	00	44	00	22	725	21 47 05.4
05	21	03	00	29	22	706	21 38 52.9
06	21	05	16	47	22	687	21 30 32.9
07	21	07	32	53	22	667	21 22 05.4
08	21	09	48	47	22	647	21 13 30.5
09	21	12	04	29	22	626	21 04 48.3
10	21	14	19	98	22	605	20 55 58.7
11	21	16	35	55	22	584	20 47 01.8
12	21	18	50	99	22	563	20 37 57.7
13	21	21	06	30	22	541	20 28 46.4
14	21	23	21	48	22	518	20 19 28.0
15	21	25	36	52	22	497	20 10 02.5
16	21	27	51	44	22	474	20 00 29.9
17	21	30	06	21	22	451	19 50 50.3
18	21	32	20	85	22	429	19 41 03.8
19	21	34	35	36	22	406	19 31 10.3
20	21	36	49	72	22	383	19 21 10.1
21	21	39	03	95	22	360	19 11 03.0
22	21	41	18	04	22	336	19 00 49.2
23	21	43	31	98	22	312	S. 18 50 28.7

Thursday 30.

	h	m	s	s	o	"	"
00	21	45	45	78	22	288	S. 18 40 01.6
01	21	47	59	44	22	265	18 29 27.9
02	21	50	12	06	22	242	18 18 47.7
03	21	52	26	34	22	218	18 08 01.0
04	21	54	39	57	22	193	17 57 08.0
05	21	56	52	66	22	170	17 46 08.5
06	21	59	05	61	22	146	17 35 02.8
07	22	01	18	41	22	122	17 23 50.9
08	22	03	31	07	22	098	17 12 32.8
09	22	05	43	59	22	074	17 01 08.6
10	22	07	55	96	22	050	16 49 38.3
11	22	10	08	19	22	027	16 38 02.1
12	22	12	20	28	22	003	16 26 19.9
13	22	14	32	23	21	980	16 14 31.9
14	22	16	44	04	21	957	16 02 38.1
15	22	18	55	71	21	933	15 50 38.5
16	22	21	07	24	21	910	15 38 33.3
17	22	23	18	63	21	887	15 26 22.6
18	22	25	29	88	21	863	15 14 06.3
19	22	27	40	99	21	841	15 01 44.5
20	22	29	51	97	21	819	14 49 17.3
21	22	32	02	82	21	797	14 36 44.8
22	22	34	13	53	21	774	14 24 07.1
23	22	36	24	11	21	753	14 11 24.2
24	22	38	34	56	21	731	S. 13 58 36.1

Friday 31.

	h	m	s	s	o	"	"
00	22	38	34	56	21	731	S. 13 58 36.1
01	22	40	44	88	21	710	13 45 43.0
02	22	42	55	08	21	689	13 32 44.9
03	22	45	05	15	21	668	13 19 41.9
04	22	47	15	09	21	647	13 06 34.1
05	22	49	24	91	21	627	12 53 21.5
06	22	51	34	61	21	607	12 40 04.3
07	22	53	44	19	21	588	12 26 42.4
08	22	55	53	66	21	568	12 13 16.0
09	22	58	03	01	21	549	11 59 45.1
10	23	00	12	25	21	531	11 46 09.8
11	23	02	21	38	21	513	11 32 30.3
12	23	04	30	40	21	495	11 18 46.4
13	23	06	39	32	21	478	11 04 58.4
14	23	08	48	13	21	460	10 51 06.4
15	23	10	56	84	21	443	10 37 10.3
16	23	13	05	45	21	428	10 23 10.3
17	23	15	13	97	21	412	10 09 06.4
18	23	17	22	39	21	396	9 54 58.7
19	23	19	30	72	21	382	9 40 47.4
20	23	21	38	97	21	368	9 26 32.4
21	23	23	47	13	21	353	9 12 13.9
22	23	25	55	21	21	331	8 57 51.9
23	23	28	03	20	21	326	S. 8 43 26.5

Saturday, SEPT. 1.

	h	m	s	s	o	"	"
00	23	30	11	12	21	314	S. 8 28 57.8

PHASES OF THE MOON.

	h	m
Aug. 1	0	Full Moon .. 15 30.5
" 8	(	Last Quarter .. 17 23.8
" 15	0	New Moon .. 13 48.6
" 23	)	First Quarter .. 08 21.4
" 31	0	Full Moon .. 02 34.0
Aug. 10	(	Perigee 16.9
" 23	(	Apogee 06.7

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semi-diameter passing the Meridian.*	Equation of Time, to be subtracted from Apparent Time.	Var. in 1 hour.
		Apparent	Var. in	Apparent	Var. in			
		Right Ascension.	1 hour.	Declination.	1 hour.			
		h m s	s	° ' "	"	m s	m s	s
Sat.	1	10 41 33.91	9.065	N. 8 16 56.4	54.40	1 04.35	0 02.21	0.789
Sun.	2	10 45 11.32	9.053	7 55 06.8	54.73	1 04.30	0 21.30	0.801
Mon.	3	10 48 48.46	9.042	7 33 09.4	55.05	1 04.26	0 40.66	0.812
Tues.	4	10 52 25.36	9.032	7 11 04.7	55.35	1 04.22	1 00.26	0.822
Wed.	5	10 56 02.03	9.023	6 48 52.8	55.64	1 04.19	1 20.09	0.831
Thur.	6	10 59 38.48	9.015	6 26 34.2	55.91	1 04.16	1 40.14	0.839
Frid.	7	11 03 14.75	9.007	6 04 09.0	56.18	1 04.13	2 00.37	0.847
Sat.	8	11 06 50.84	9.001	5 41 37.7	56.43	1 04.10	2 20.77	0.853
Sun.	9	11 10 26.79	8.995	5 19 00.6	56.67	1 04.07	2 41.33	0.859
Mon.	10	11 14 02.59	8.989	4 56 17.9	56.89	1 04.05	3 02.02	0.865
Tues.	11	11 17 38.27	8.984	4 33 30.0	57.10	1 04.03	3 22.84	0.870
Wed.	12	11 21 13.84	8.980	4 10 37.4	57.29	1 04.02	3 43.76	0.874
Thur.	13	11 24 49.33	8.977	3 47 40.2	57.47	1 04.00	4 04.77	0.877
Frid.	14	11 28 24.74	8.974	3 24 39.0	57.63	1 03.99	4 25.86	0.880
Sat.	15	11 32 00.09	8.972	3 01 33.9	57.78	1 03.99	4 47.00	0.882
Sun.	16	11 35 35.39	8.970	2 38 25.5	57.92	1 03.98	5 08.19	0.883
Mon.	17	11 39 10.67	8.970	2 15 14.0	58.04	1 03.98	5 29.40	0.884
Tues.	18	11 42 45.95	8.970	1 51 59.8	58.14	1 03.98	5 50.62	0.884
Wed.	19	11 46 21.24	8.971	1 28 43.3	58.23	1 03.99	6 11.83	0.883
Thur.	20	11 49 56.55	8.972	1 05 24.8	58.31	1 04.00	6 33.01	0.882
Frid.	21	11 53 31.92	8.975	0 42 04.7	58.37	1 04.01	6 54.14	0.879
Sat.	22	11 57 07.35	8.978	N. 0 18 43.2	58.42	1 04.02	7 15.20	0.876
Sun.	23	12 00 42.87	8.982	S. 0 04 39.1	58.45	1 04.04	7 36.17	0.872
Mon.	24	12 04 18.51	8.987	0 28 02.1	58.47	1 04.06	7 57.04	0.867
Tues.	25	12 07 54.27	8.993	0 51 25.4	58.47	1 04.09	8 17.77	0.861
Wed.	26	12 11 30.19	9.000	1 14 48.5	58.46	1 04.11	8 38.34	0.854
Thur.	27	12 15 06.29	9.008	1 38 11.3	58.44	1 04.14	8 58.75	0.846
Frid.	28	12 18 42.59	9.017	2 01 33.3	58.40	1 04.17	9 18.95	0.837
Sat.	29	12 22 19.11	9.027	2 24 54.3	58.35	1 04.21	9 38.93	0.827
Sun.	30	12 25 55.87	9.038	2 48 13.9	58.28	1 04.25	9 58.66	0.817
Mon.	31	12 29 32.92	9.050	S. 3 11 31.8	58.21	1 04.29	10 18.11	0.805

* Mean Time of the Semidiameter passing may be found by subtracting 0.18 from the Sidereal Time.

AT MEAN NOON.

Date.	THE SUN'S			Equation of Time, to be subtracted from Apparent Time.	Sidereal Time.
	Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*		
	h m s	° ' "	' "	m s	h m s
Sat. 1	10 41 33.92	N. 8 16 56.4	15 52.71	0 02.21	10 41 36.12
Sun. 2	10 45 11.38	7 55 06.4	15 52.94	0 21.30	10 45 32.68
Mon. 3	10 48 48.57	7 33 08.8	15 53.17	0 40.66	10 49 29.23
Tues. 4	10 52 25.51	7 11 03.7	15 53.40	1 00.27	10 53 25.78
Wed. 5	10 56 02.23	6 48 51.6	15 53.63	1 20.11	10 57 22.34
Thur. 6	10 59 38.73	6 26 32.6	15 53.86	1 40.16	11 01 18.89
Frid. 7	11 03 15.05	6 04 07.2	15 54.10	2 00.40	11 05 15.45
Sat. 8	11 06 51.20	5 41 35.5	15 54.34	2 20.80	11 09 12.00
Sun. 9	11 10 27.19	5 18 58.0	15 54.58	2 41.36	11 13 08.55
Mon. 10	11 14 03.04	4 56 15.0	15 54.82	3 02.06	11 17 05.11
Tues. 11	11 17 38.77	4 33 26.8	15 55.07	3 22.89	11 21 01.66
Wed. 12	11 21 14.40	4 10 33.8	15 55.32	3 43.81	11 24 58.21
Thur. 13	11 24 49.94	3 47 36.3	15 55.57	4 04.83	11 28 54.77
Frid. 14	11 28 25.40	3 24 34.7	15 55.82	4 25.92	11 32 51.32
Sat. 15	11 32 00.80	3 01 29.3	15 56.08	4 47.07	11 36 47.87
Sun. 16	11 35 36.16	2 38 20.5	15 56.34	5 08.26	11 40 44.43
Mon. 17	11 39 11.50	2 15 08.7	15 56.61	5 29.48	11 44 40.98
Tues. 18	11 42 46.82	1 51 54.2	15 56.87	5 50.71	11 48 37.53
Wed. 19	11 46 22.16	1 28 37.3	15 57.14	6 11.92	11 52 34.08
Thur. 20	11 49 57.53	1 05 18.4	15 57.41	6 33.11	11 56 30.64
Frid. 21	11 53 32.95	0 41 58.0	15 57.69	6 54.24	12 00 27.19
Sat. 22	11 57 08.44	N. 0 18 36.2	15 57.96	7 15.31	12 04 23.74
Sun. 23	12 00 44.01	S. 0 04 46.6	15 58.24	7 36.28	12 08 20.30
Mon. 24	12 04 19.70	0 28 09.9	15 58.51	7 57.15	12 12 16.85
Tues. 25	12 07 55.52	0 51 33.5	15 58.79	8 17.89	12 16 13.40
Wed. 26	12 11 31.49	1 14 57.0	15 59.07	8 38.47	12 20 09.96
Thur. 27	12 15 07.64	1 38 20.1	15 59.34	8 58.87	12 24 06.51
Frid. 28	12 18 43.99	2 01 42.4	15 59.62	9 19.08	12 28 03.06
Sat. 29	12 22 20.56	2 25 03.7	15 59.90	9 39.06	12 31 59.62
Sun. 30	12 25 57.38	2 48 23.6	16 00.17	9 58.79	12 35 56.17
Mon. 31	12 29 34.47	S. 3 11 41.8	16 00.44	10 18.25	12 39 52.72

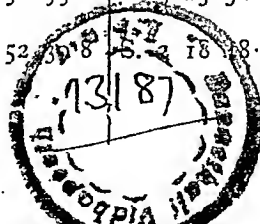
* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
	12h.	12h.			oh.	12h.	oh.	12h.
	° ' "	"		h m s	' "	' "	' "	' "
1	158 46 39.0	S. 0.34	0.0038439	01 20 08.99	15 57.06	16 00.92	58 32.53	58 46.70
2	159 44 43.9	0.27	.0037404	01 16 13.08	16 04.24	16 06.98	58 58.89	59 08.97
3	160 42 50.7	0.18	.0036363	01 12 17.17	16 09.15	16 10.72	59 16.91	59 22.69
4	161 40 59.4	S. 0.06	0.0035316	01 08 21.26	16 11.73	16 12.21	59 26.40	59 28.14
5	162 39 10.1	N. 0.08	.0034262	01 04 25.36	16 12.18	16 11.69	59 28.04	59 26.26
6	163 37 22.8	0.22	.0033200	01 00 29.45	16 10.80	16 09.53	59 22.97	59 18.32
7	164 35 37.6	0.35	0.0032127	00 56 33.54	16 07.94	16 06.04	59 12.46	59 05.51
8	165 33 54.5	0.47	.0031045	00 52 37.63	16 03.88	16 01.46	58 57.56	58 48.70
9	166 32 13.5	0.58	.0029950	00 48 41.73	15 58.81	15 55.93	58 38.97	58 28.41
10	167 30 34.6	0.67	0.0028843	00 44 45.82	15 52.83	15 49.52	58 17.03	58 04.87
11	168 28 57.7	0.73	.0027722	00 40 49.91	15 46.00	15 42.27	57 51.94	57 38.27
12	169 27 22.8	0.76	.0026587	00 36 54.00	15 38.36	15 34.29	57 23.93	57 08.98
13	170 25 49.9	0.76	0.0025439	00 32 58.10	15 30.08	15 25.77	56 53.53	56 37.71
14	171 24 18.9	0.74	.0024276	00 29 02.19	15 21.41	15 17.03	56 21.68	56 05.62
15	172 22 49.7	0.68	.0023100	00 25 06.28	15 12.71	15 08.49	55 49.75	55 34.27
16	173 21 22.3	0.60	0.0021911	00 21 10.37	15 04.45	15 00.65	55 19.44	55 05.50
17	174 19 56.8	0.50	.0020710	00 17 14.47	14 57.16	14 54.04	54 52.68	54 41.22
18	175 18 33.0	0.39	.0019498	00 13 18.56	14 51.35	14 49.15	54 31.35	54 23.28
19	176 17 10.9	0.27	0.0018277	00 09 22.65	14 47.49	14 46.42	54 17.20	54 13.28
20	177 15 50.5	0.15	.0017047	00 05 26.74	14 45.99	14 46.21	54 11.67	54 12.49
21	178 14 31.9	N. 0.04	.0015810	{ 00 01 30.84 } { 23 57 34.93 }	14 47.12	14 48.72	54 15.82	54 21.72
22	179 13 14.9	S. 0.06	0.0014567	23 53 39.02	14 51.03	14 54.04	54 30.19	54 41.24
23	180 11 59.7	0.16	.0013319	23 49 43.11	14 57.73	15 02.07	54 54.78	55 10.72
24	181 10 46.2	0.24	.0012068	23 45 47.21	15 07.03	15 12.52	55 28.90	55 49.08
25	182 09 34.5	0.28	0.0010815	23 41 51.30	15 18.50	15 24.86	56 11.01	56 34.36
26	183 08 24.5	0.30	.0009562	23 37 55.39	15 31.50	15 38.31	56 58.74	57 23.72
27	184 07 16.3	0.30	.0008311	23 33 59.49	15 45.14	15 51.86	57 48.79	58 13.46
28	185 06 10.0	0.26	0.0007061	23 30 03.58	15 58.32	16 04.37	58 37.16	58 59.37
29	186 05 05.7	0.19	.0005815	23 26 07.67	16 09.86	16 14.68	59 19.54	59 37.22
30	187 04 03.4	S. 0.10	.0004574	23 22 11.76	16 18.70	16 21.85	59 51.99	60 03.53
31	188 03 03.2	N. 0.01	0.0003337	23 18 15.86	16 24.06	16 25.32	60 11.66	60 16.27

MEAN TIME.

Day of the Month.	THE MOON'S						
	Longitude.		Latitude.		Age.	Meridian Passage.	
	oh.	12h.	oh.	12h.	oh.	Upper.	Lower.
	° ' "	° ' "	° ' "	° ' "	d	h m	h m
1	349 48 09.4	356 48 32.4	S. 4 50 02.5	S. 4 38 15.9	16.42	00 52.3	13 16.6
2	3 51 35.1	10 56 40.8	4 22 10.0	4 01 56.5	17.42	01 40.8	14 05.1
3	18 03 13.5	25 10 39.1	3 37 52.1	3 10 19.2	18.42	02 29.6	14 54.3
4	32 18 26.9	39 26 10.0	2 39 44.4	2 06 37.8	19.42	03 19.5	15 45.3
5	46 33 26.1	53 39 57.0	1 31 32.6	S. 0 55 03.7	20.42	04 11.8	16 38.9
6	60 45 28.8	67 49 51.4	S. 0 17 47.3	N. 0 19 40.4	21.42	05 06.9	17 35.6
7	74 52 57.3	81 54 41.2	N. 0 56 43.7	1 32 47.8	22.42	06 05.0	18 34.9
8	88 54 58.4	95 53 44.4	2 07 19.6	2 39 48.4	23.42	07 05.1	19 35.4
9	102 50 53.7	109 46 19.8	3 09 45.6	3 36 46.1	24.42	08 05.4	20 35.0
10	116 39 53.9	123 31 25.4	4 00 28.0	4 20 32.9	25.42	09 04.0	21 32.0
11	130 20 41.7	137 07 28.4	4 36 46.4	4 48 58.7	26.42	09 59.2	22 25.3
12	143 51 30.0	150 32 30.7	4 57 03.5	5 00 59.3	27.42	10 50.5	23 14.8
13	157 10 14.9	163 44 28.3	5 00 48.3	4 56 36.7	28.42	11 38.2	* *
14	170 14 58.8	176 41 37.1	4 48 34.4	4 36 53.9	29.42	12 23.0	00 00.9
15	183 04 17.6	189 22 58.7	4 21 50.6	4 03 41.5	0.94	13 05.9	00 44.6
16	195 37 43.3	201 48 39.0	3 42 45.3	3 19 21.5	1.94	13 47.9	01 27.0
17	207 55 57.9	213 59 56.7	2 53 50.1	2 26 31.0	2.94	14 29.9	02 08.9
18	220 00 56.7	225 59 22.9	1 57 44.3	1 27 49.1	3.94	15 12.8	02 51.2
19	231 55 44.2	237 50 32.5	N. 0 57 04.5	N. 0 25 48.7	4.94	15 57.4	03 34.9
20	243 44 22.8	249 37 52.2	S. 0 05 40.4	S. 0 37 05.4	5.94	16 44.0	04 20.4
21	255 31 39.7	261 26 25.6	1 08 09.2	1 38 34.8	6.94	17 32.9	05 08.2
22	267 22 51.0	273 21 37.0	2 08 05.0	2 36 22.7	7.94	18 23.8	05 58.1
23	279 23 24.1	285 28 51.7	3 03 09.8	3 28 08.1	8.94	19 15.9	06 49.7
24	291 38 36.7	297 53 13.2	3 50 58.6	4 11 21.9	9.94	20 08.5	07 42.2
25	304 13 11.2	310 38 55.4	4 28 58.0	4 43 26.8	10.94	21 00.5	08 34.6
26	317 10 44.3	323 48 49.2	4 54 28.5	5 01 44.5	11.94	21 51.5	09 26.1
27	330 33 13.1	337 23 50.3	5 04 57.6	5 03 53.3	12.94	22 41.4	10 16.5
28	344 20 25.6	351 22 34.8	4 58 20.8	4 48 14.0	13.94	23 30.8	11 06.1
29	358 29 44.6	5 41 14.3	4 33 32.6	4 14 22.2	14.94	* *	11 55.4
30	12 56 16.7	20 14 00.4	3 50 55.8	3 23 32.9	15.94	00 20.3	12 45.5
31	27 33 31.5	34 53 56.2	S. 2 52 39.8	S. 2 18 38.8	16.94	01 11.0	13 37.2



MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Saturday 1.					Monday 3.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	23 30 11.12	21.314	S. 8 28 57.8	145.05	00	01 12 08.43	21.411	N. 3 43 31.9	154.63
01	23 32 18.97	21.302	8 14 25.9	145.58	01	01 14 16.95	21.429	3 58 59.2	154.46
02	23 34 26.74	21.290	7 59 50.8	146.10	02	01 16 25.58	21.448	4 14 25.4	154.28
03	23 36 34.45	21.280	7 45 12.7	146.60	03	01 18 34.33	21.468	4 29 50.6	154.10
04	23 38 42.10	21.269	7 30 31.6	147.09	04	01 20 43.19	21.488	4 45 14.6	153.89
05	23 40 49.68	21.258	7 15 47.6	147.57	05	01 22 52.18	21.509	5 00 37.3	153.67
06	23 42 57.20	21.249	7 01 00.8	148.03	06	01 25 01.30	21.530	5 15 58.6	153.43
07	23 45 04.67	21.241	6 46 11.3	148.48	07	01 27 10.54	21.553	5 31 18.5	153.18
08	23 47 12.09	21.233	6 31 19.0	148.93	08	01 29 19.93	21.576	5 46 36.8	152.92
09	23 49 19.46	21.225	6 16 24.2	149.34	09	01 31 29.45	21.599	6 01 53.5	152.63
10	23 51 26.79	21.218	6 01 26.9	149.75	10	01 33 39.12	21.623	6 17 08.4	152.33
11	23 53 34.07	21.210	5 46 27.2	150.14	11	01 35 48.93	21.648	6 32 21.5	152.03
12	23 55 41.31	21.204	5 31 25.2	150.52	12	01 37 58.90	21.674	6 47 32.7	151.70
13	23 57 48.52	21.199	5 16 21.0	150.88	13	01 40 09.02	21.700	7 02 41.9	151.36
14	23 59 55.70	21.195	5 01 14.6	151.24	14	01 42 19.30	21.728	7 17 49.0	150.99
15	00 02 02.86	21.191	4 46 06.1	151.58	15	01 44 29.75	21.755	7 32 53.8	150.62
16	00 04 09.99	21.186	4 30 55.6	151.91	16	01 46 40.36	21.783	7 47 56.4	150.23
17	00 06 17.09	21.183	4 15 43.2	152.22	17	01 48 51.14	21.812	8 02 56.6	149.83
18	00 08 24.19	21.182	4 00 29.0	152.51	18	01 51 02.10	21.842	8 17 54.3	149.41
19	00 10 31.27	21.179	3 45 13.1	152.79	19	01 53 13.24	21.872	8 32 49.5	148.98
20	00 12 38.34	21.178	3 29 55.5	153.07	20	01 55 24.56	21.902	8 47 42.0	148.52
21	00 14 45.40	21.177	3 14 36.3	153.32	21	01 57 36.06	21.933	9 02 31.7	148.05
22	00 16 52.46	21.178	2 59 15.7	153.55	22	01 59 47.76	21.966	9 17 18.6	147.58
23	00 18 59.53	21.178	2 43 53.7	153.78	23	02 01 59.65	21.998	9 32 02.6	147.08
Sunday 2.					Tuesday 4.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	00 21 06.60	21.179	S. 2 28 30.4	153.98	00	02 04 11.74	22.032	N. 9 46 43.5	146.56
01	00 23 13.68	21.182	2 13 05.9	154.18	01	02 06 24.03	22.065	10 01 21.3	146.03
02	00 25 20.78	21.185	1 57 40.2	154.37	02	02 08 36.52	22.100	10 15 55.9	145.48
03	00 27 27.90	21.188	1 42 13.5	154.53	03	02 10 49.23	22.135	10 30 27.1	144.93
04	00 29 35.03	21.191	1 26 45.9	154.68	04	02 13 02.14	22.170	10 44 55.0	144.36
05	00 31 42.19	21.196	1 11 17.4	154.82	05	02 15 15.27	22.207	10 59 19.4	143.76
06	00 33 49.38	21.201	0 55 48.1	154.94	06	02 17 28.62	22.243	11 13 40.1	143.15
07	00 35 56.60	21.207	0 40 18.1	155.05	07	02 19 42.19	22.281	11 27 57.2	142.53
08	00 38 03.86	21.214	0 24 47.5	155.14	08	02 21 55.99	22.319	11 42 10.5	141.89
09	00 40 11.17	21.221	0 09 16.4	155.22	09	02 24 10.02	22.357	11 56 19.9	141.24
10	00 42 18.51	21.228	0 06 15.1	155.28	10	02 26 24.27	22.395	12 10 25.4	140.58
11	00 44 25.91	21.235	0 21 47.0	155.33	11	02 28 38.76	22.435	12 24 26.8	139.89
12	00 46 33.36	21.247	0 37 19.1	155.37	12	02 30 53.49	22.475	12 38 24.1	139.19
13	00 48 40.87	21.257	0 52 51.4	155.39	13	02 33 08.46	22.515	12 52 17.1	138.48
14	00 50 48.44	21.267	1 08 23.8	155.40	14	02 35 23.67	22.556	13 06 05.8	137.75
15	00 52 56.07	21.278	1 23 56.2	155.38	15	02 37 39.13	22.598	13 19 50.1	137.00
16	00 55 03.78	21.291	1 39 28.4	155.36	16	02 39 54.84	22.639	13 33 29.8	136.23
17	00 57 11.56	21.303	1 55 00.5	155.33	17	02 42 10.80	22.682	13 47 04.9	135.46
18	00 59 19.41	21.316	2 10 32.3	155.27	18	02 44 27.02	22.724	14 00 35.3	134.67
19	01 01 27.35	21.331	2 26 03.7	155.19	19	02 46 43.49	22.767	14 14 00.9	133.86
20	01 03 35.38	21.346	2 41 34.6	155.11	20	02 49 00.22	22.810	14 27 21.6	133.03
21	01 05 43.50	21.361	2 57 05.0	155.01	21	02 51 17.21	22.854	14 40 37.3	132.19
22	01 07 51.71	21.377	3 12 34.7	154.89	22	02 53 34.37	22.899	14 53 47.9	131.33
23	01 10 00.02	21.393	3 28 03.7	154.77	23	02 55 52.00	22.943	15 06 53.3	130.47
24	01 12 08.43	21.411	N. 3 43 31.9	154.63	24	02 58 09.79	22.988	N. 15 19 53.5	129.58

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Wednesday 5.					Friday 7.				
	h m s		° ' "			h m s		° ' "	
00	02 58 09.79	22.988	N. 15 19 53.5	129.58	00	04 53 54.27	25.178	N. 23 31 54.9	70.19
01	03 00 27.85	23.033	15 32 48.3	128.68	01	04 56 25.45	25.214	23 38 51.4	68.65
02	03 02 46.19	23.080	15 45 37.7	127.77	02	04 58 56.84	25.250	23 45 38.7	67.09
03	03 05 04.81	23.126	15 58 21.5	126.83	03	05 01 28.45	25.286	23 52 16.5	65.53
04	03 07 23.70	23.171	16 10 59.7	125.89	04	05 04 00.27	25.320	23 58 45.0	63.96
05	03 09 42.86	23.218	16 23 32.2	124.93	05	05 06 32.29	25.353	24 05 04.0	62.37
06	03 12 02.31	23.265	16 35 58.8	123.94	06	05 09 04.51	25.387	24 11 13.4	60.78
07	03 14 22.04	23.312	16 48 19.5	122.96	07	05 11 36.93	25.418	24 17 13.3	59.18
08	03 16 42.05	23.358	17 00 34.3	121.95	08	05 14 09.53	25.448	24 23 03.6	57.58
09	03 19 02.34	23.406	17 12 42.9	120.93	09	05 16 42.31	25.479	24 28 44.2	55.96
10	03 21 22.02	23.454	17 24 45.4	119.89	10	05 19 15.28	25.508	24 34 15.1	54.33
11	03 23 43.79	23.502	17 36 41.6	118.83	11	05 21 48.41	25.536	24 39 36.2	52.70
12	03 26 04.94	23.549	17 48 31.4	117.77	12	05 24 21.71	25.563	24 44 47.5	51.06
13	03 28 26.38	23.598	18 00 14.8	116.69	13	05 26 55.17	25.589	24 49 48.9	49.41
14	03 30 48.11	23.645	18 11 51.7	115.59	14	05 29 28.78	25.614	24 54 40.4	47.76
15	03 33 10.12	23.693	18 23 21.9	114.48	15	05 32 02.54	25.638	24 59 22.0	46.09
16	03 35 32.43	23.742	18 34 45.4	113.35	16	05 34 36.44	25.661	25 03 53.5	44.42
17	03 37 55.02	23.790	18 46 02.1	112.21	17	05 37 10.47	25.683	25 08 15.0	42.75
18	03 40 17.91	23.838	18 57 11.9	111.05	18	05 39 44.63	25.703	25 12 26.5	41.08
19	03 42 41.08	23.887	19 08 14.7	109.88	19	05 42 18.91	25.723	25 16 27.9	39.39
20	03 45 04.55	23.935	19 19 10.5	108.71	20	05 44 53.30	25.740	25 20 19.2	37.71
21	03 47 28.30	23.983	19 29 59.2	107.51	21	05 47 27.79	25.758	25 24 00.4	36.02
22	03 49 52.34	24.031	19 40 40.6	106.28	22	05 50 02.39	25.774	25 27 31.4	34.32
23	03 52 16.67	24.079	N. 19 51 14.6	105.06	23	05 52 37.08	25.788	N. 25 30 52.2	32.61
Thursday 6.					Saturday 8.				
	h m s		° ' "			h m s		° ' "	
00	03 54 41.29	24.127	N. 20 01 41.3	103.83	00	05 55 11.85	25.802	N. 25 34 02.7	30.90
01	03 57 06.19	24.174	20 12 00.5	102.58	01	05 57 46.70	25.814	25 37 03.0	29.19
02	03 59 31.38	24.223	20 22 12.2	101.30	02	06 00 21.62	25.825	25 39 53.0	27.48
03	04 01 56.86	24.271	20 32 16.1	100.02	03	06 02 56.60	25.835	25 42 32.7	25.76
04	04 04 22.63	24.318	20 42 12.4	98.73	04	06 05 31.64	25.843	25 45 02.1	24.04
05	04 06 48.67	24.364	20 52 00.8	97.41	05	06 08 06.72	25.850	25 47 21.2	22.33
06	04 09 15.00	24.411	21 01 41.3	96.09	06	06 10 41.84	25.857	25 49 30.0	20.60
07	04 11 41.60	24.457	21 11 13.9	94.76	07	06 13 17.00	25.861	25 51 28.4	18.88
08	04 14 08.48	24.503	21 20 38.4	93.40	08	06 15 52.17	25.864	25 53 16.5	17.15
09	04 16 35.64	24.549	21 29 54.7	92.04	09	06 18 27.37	25.867	25 54 54.2	15.42
10	04 19 03.07	24.594	21 39 02.9	90.67	10	06 21 02.57	25.867	25 56 21.5	13.69
11	04 21 30.77	24.639	21 48 02.8	89.28	11	06 23 37.77	25.866	25 57 38.5	11.96
12	04 23 58.74	24.684	21 56 54.3	87.88	12	06 26 12.96	25.864	25 58 45.0	10.23
13	04 26 26.98	24.728	22 05 37.4	86.48	13	06 28 48.14	25.861	25 59 41.2	08.50
14	04 28 55.48	24.772	22 14 12.0	85.05	14	06 31 23.29	25.856	26 00 27.0	06.77
15	04 31 24.24	24.815	22 22 38.0	83.62	15	06 33 58.41	25.851	26 01 02.4	05.03
16	04 33 53.26	24.858	22 30 55.4	82.18	16	06 36 33.50	25.843	26 01 27.4	03.31
17	04 36 22.54	24.900	22 39 04.1	80.71	17	06 39 08.53	25.834	26 01 42.1	01.59
18	04 38 52.06	24.941	22 47 03.9	79.23	18	06 41 43.51	25.824	26 01 46.5	00.13
19	04 41 21.83	24.983	22 54 54.9	77.76	19	06 44 18.42	25.813	26 01 40.5	01.86
20	04 43 51.85	25.023	23 02 37.0	76.27	20	06 46 53.27	25.801	26 01 24.2	03.58
21	04 46 22.10	25.062	23 10 10.1	74.77	21	06 49 28.03	25.787	26 00 57.6	05.29
22	04 48 52.59	25.102	23 17 34.2	73.25	22	06 52 02.71	25.772	26 00 20.7	07.01
23	04 51 23.32	25.140	23 24 49.1	71.73	23	06 54 37.29	25.755	25 59 33.5	08.72
24	04 53 54.27	25.178	N. 23 31 54.9	70.19	24	06 57 11.77	25.738	N. 25 58 36.1	10.42

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Sunday 9.					Tuesday 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	06 57 11.77	25.738	N. 25 58 36.1	10.42	00	08 56 33.75	23.663	N. 22 05 31.8	82.85
01	06 59 46.14	25.718	25 57 28.5	12.13	01	08 58 55.55	23.603	21 57 11.0	84.07
02	07 02 20.39	25.698	25 56 10.6	13.83	02	09 01 16.99	23.543	21 48 43.0	85.28
03	07 04 54.52	25.677	25 54 42.5	15.53	03	09 03 38.07	23.483	21 40 07.7	86.48
04	07 07 28.51	25.653	25 53 04.3	17.21	04	09 05 58.78	23.422	21 31 25.2	87.67
05	07 10 02.35	25.628	25 51 16.0	18.89	05	09 08 19.13	23.361	21 22 35.7	88.84
06	07 12 36.05	25.604	25 49 17.6	20.57	06	09 10 39.11	23.300	21 13 39.1	90.00
07	07 15 09.60	25.578	25 47 09.2	22.24	07	09 12 58.73	23.239	21 04 35.7	91.13
08	07 17 42.98	25.550	25 44 50.7	23.91	08	09 15 17.98	23.178	20 55 25.5	92.27
09	07 20 16.20	25.521	25 42 22.3	25.57	09	09 17 36.87	23.117	20 46 08.5	93.38
10	07 22 49.23	25.490	25 39 43.9	27.22	10	09 19 55.38	23.055	20 36 44.9	94.48
11	07 25 22.08	25.459	25 36 55.7	28.87	11	09 22 13.53	22.993	20 27 14.8	95.57
12	07 27 54.74	25.427	25 33 57.5	30.52	12	09 24 31.30	22.932	20 17 38.1	96.64
13	07 30 27.20	25.393	25 30 49.5	32.14	13	09 26 48.71	22.870	20 07 55.1	97.70
14	07 32 59.45	25.358	25 27 31.8	33.77	14	09 29 05.74	22.808	19 58 05.7	98.74
15	07 35 31.49	25.322	25 24 04.3	35.38	15	09 31 22.40	22.746	19 48 10.2	99.77
16	07 38 03.31	25.285	25 20 27.2	36.98	16	09 33 38.69	22.685	19 38 08.5	100.78
17	07 40 34.91	25.247	25 16 40.5	38.58	17	09 35 54.42	22.623	19 28 00.8	101.78
18	07 43 06.27	25.208	25 12 44.2	40.18	18	09 38 10.17	22.562	19 17 47.1	102.77
19	07 45 37.40	25.168	25 08 38.3	41.77	19	09 40 25.36	22.500	19 07 27.5	103.74
20	07 48 08.29	25.127	25 04 23.0	43.33	20	09 42 40.17	22.438	18 57 02.2	104.69
21	07 50 38.92	25.084	24 59 58.3	44.89	21	09 44 54.62	22.378	18 46 31.2	105.64
22	07 53 09.30	25.042	24 55 24.3	46.45	22	09 47 08.71	22.318	18 35 54.5	106.57
23	07 55 39.42	24.998	N. 24 50 40.9	48.00	23	09 49 22.43	22.256	N. 18 25 12.4	107.48
Monday 10.					Wednesday 12.				
00	07 58 09.27	24.953	N. 24 45 48.3	49.53	00	09 51 35.78	22.195	N. 18 14 24.8	108.38
01	08 00 38.85	24.907	24 40 46.5	51.06	01	09 53 48.77	22.135	18 03 31.8	109.27
02	08 03 08.15	24.860	24 35 35.6	52.57	02	09 56 01.40	22.074	17 52 33.6	110.13
03	08 05 37.17	24.813	24 30 15.7	54.07	03	09 58 13.66	22.013	17 41 30.3	110.98
04	08 08 05.90	24.764	24 24 46.8	55.50	04	10 00 25.56	21.954	17 30 21.8	111.83
05	08 10 34.34	24.715	24 19 09.0	57.04	05	10 02 37.11	21.895	17 19 05.3	112.66
06	08 13 02.48	24.665	24 13 22.3	58.52	06	10 04 48.30	21.835	17 07 49.9	113.47
07	08 15 30.32	24.615	24 07 26.8	59.97	07	10 06 59.13	21.776	16 56 26.7	114.27
08	08 17 57.86	24.563	24 01 22.7	61.41	08	10 09 09.61	21.718	16 44 58.7	115.05
09	08 20 25.08	24.511	23 55 09.9	62.85	09	10 11 19.74	21.659	16 33 26.1	115.83
10	08 22 51.99	24.458	23 48 48.5	64.27	10	10 13 29.52	21.601	16 21 48.8	116.58
11	08 25 18.58	24.405	23 42 18.7	65.68	11	10 15 38.95	21.543	16 10 07.1	117.33
12	08 27 44.85	24.351	23 35 40.4	67.08	12	10 17 48.04	21.487	15 58 20.9	118.06
13	08 30 10.79	24.297	23 28 53.8	68.46	13	10 19 56.79	21.429	15 46 50.4	118.77
14	08 32 36.41	24.242	23 21 58.9	69.83	14	10 22 05.19	21.373	15 35 35.7	119.47
15	08 35 01.69	24.185	23 14 55.8	71.20	15	10 24 13.26	21.316	15 23 56.8	120.16
16	08 37 26.63	24.128	23 07 44.5	72.54	16	10 26 20.98	21.260	15 10 53.8	120.83
17	08 39 51.23	24.072	23 00 25.3	73.88	17	10 28 28.38	21.205	14 58 26.8	121.49
18	08 42 15.49	24.015	22 52 58.0	75.20	18	10 30 35.44	21.150	14 46 15.9	122.13
19	08 44 39.41	23.958	22 45 22.9	76.50	19	10 32 42.18	21.096	14 34 01.2	122.76
20	08 47 02.98	23.900	22 37 40.0	77.80	20	10 34 48.59	21.042	14 21 42.8	123.38
21	08 49 26.21	23.842	22 29 49.3	79.08	21	10 36 54.68	20.988	14 09 20.6	123.99
22	08 51 49.08	23.782	22 21 51.0	80.34	22	10 39 00.44	20.934	13 56 54.9	124.58
23	08 54 11.59	23.723	22 13 45.2	81.60	23	10 41 05.89	20.882	13 44 25.7	125.16
24	08 56 33.75	23.663	N. 22 05 31.8	82.85	24	10 43 11.02	20.829	N. 13 31 53.0	125.73

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 13.					Saturday 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	10 43 11.02	20.829	N. 13 31 53.0	125.73	00	12 18 12.84	19.001	N. 2 46 57.6	138.58
01	10 45 15.84	20.778	13 19 17.0	126.28	01	12 20 06.78	18.978	2 33 06.1	138.58
02	10 47 20.35	20.727	13 06 37.7	126.82	02	12 22 00.58	18.957	2 19 14.7	138.57
03	10 49 24.56	20.676	12 53 55.2	127.34	03	12 23 54.26	18.935	2 05 23.3	138.55
04	10 51 28.46	20.626	12 41 09.6	127.85	04	12 25 47.80	18.914	1 51 32.1	138.52
05	10 53 32.07	20.576	12 28 21.0	128.35	05	12 27 41.23	18.895	1 37 41.1	138.48
06	10 55 35.37	20.527	12 15 29.4	128.83	06	12 29 34.54	18.875	1 23 50.3	138.44
07	10 57 38.39	20.478	12 02 35.0	129.31	07	12 31 27.73	18.856	1 09 59.8	138.38
08	10 59 41.11	20.429	11 49 37.7	129.78	08	12 33 20.81	18.838	0 56 09.7	138.32
09	11 01 43.54	20.383	11 36 37.7	130.22	09	12 35 13.79	18.821	0 42 20.0	138.24
10	11 03 45.70	20.336	11 23 35.1	130.65	10	12 37 06.66	18.803	0 28 30.8	138.15
11	11 05 47.57	20.288	11 10 29.9	131.08	11	12 38 59.43	18.787	0 14 42.2	138.06
12	11 07 49.16	20.243	10 57 22.2	131.48	12	12 40 52.10	18.771	N. 0 00 54.1	137.96
13	11 09 50.48	20.198	10 44 12.1	131.88	13	12 42 44.68	18.757	S. 0 12 53.3	137.85
14	11 11 51.53	20.153	10 30 59.6	132.27	14	12 44 37.18	18.743	0 26 40.1	137.73
15	11 13 52.32	20.109	10 17 44.9	132.64	15	12 46 29.59	18.728	0 40 26.0	137.59
16	11 15 52.84	20.065	10 04 27.9	133.01	16	12 48 21.92	18.716	0 54 11.2	137.47
17	11 17 53.10	20.023	9 51 08.8	133.35	17	12 50 14.18	18.703	1 07 55.6	137.32
18	11 19 53.11	19.981	9 37 47.7	133.68	18	12 52 06.36	18.691	1 21 39.0	137.16
19	11 21 52.87	19.939	9 24 24.6	134.02	19	12 53 58.47	18.680	1 35 21.5	136.99
20	11 23 52.38	19.898	9 10 59.5	134.33	20	12 55 50.52	18.670	1 49 02.9	136.82
21	11 25 51.64	19.857	8 57 32.7	134.63	21	12 57 42.51	18.660	2 02 43.3	136.64
22	11 27 50.66	19.817	8 44 04.0	134.92	22	12 59 34.44	18.650	2 16 22.6	136.45
23	11 29 49.44	19.778	N. 8 30 33.7	135.19	23	13 01 26.31	18.642	S. 2 30 00.7	136.25
Friday 14.					Sunday 16.				
00	11 31 47.99	19.739	N. 8 17 01.7	135.46	00	13 03 18.14	18.634	S. 2 43 37.6	136.04
01	11 33 46.51	19.701	8 03 28.2	135.72	01	13 05 09.92	18.627	2 57 13.2	135.83
02	11 35 44.40	19.663	7 49 53.1	135.96	02	13 07 01.66	18.620	3 10 47.5	135.61
03	11 37 42.27	19.627	7 36 16.7	136.19	03	13 08 53.36	18.613	3 24 20.5	135.38
04	11 39 39.92	19.591	7 22 38.8	136.42	04	13 10 45.02	18.608	3 37 52.0	135.13
05	11 41 37.36	19.555	7 08 59.7	136.62	05	13 12 36.66	18.603	3 51 22.1	134.89
06	11 43 34.58	19.520	6 55 19.4	136.82	06	13 14 28.26	18.598	4 04 50.7	134.63
07	11 45 31.60	19.486	6 41 37.9	137.01	07	13 16 19.84	18.595	4 18 17.7	134.37
08	11 47 28.41	19.453	6 27 55.3	137.18	08	13 18 11.40	18.593	4 31 43.1	134.09
09	11 49 25.03	19.419	6 14 11.7	137.35	09	13 20 02.95	18.590	4 45 06.8	133.81
10	11 51 21.44	19.387	6 00 27.1	137.51	10	13 21 54.48	18.588	4 58 28.8	133.53
11	11 53 17.67	19.355	5 46 41.6	137.65	11	13 23 46.00	18.587	5 11 49.1	133.23
12	11 55 13.70	19.323	5 32 55.3	137.78	12	13 25 37.52	18.586	5 25 07.5	132.92
13	11 57 09.55	19.293	5 19 08.2	137.91	13	13 27 29.03	18.586	5 38 24.1	132.61
14	11 59 05.22	19.264	5 05 20.4	138.02	14	13 29 20.55	18.587	5 51 38.8	132.28
15	12 01 00.72	19.235	4 51 32.0	138.12	15	13 31 12.07	18.588	6 04 51.5	131.96
16	12 02 56.04	19.206	4 37 43.0	138.21	16	13 33 03.60	18.589	6 18 02.3	131.63
17	12 04 51.19	19.178	4 23 53.5	138.28	17	13 34 55.14	18.592	6 31 11.0	131.28
18	12 06 46.18	19.151	4 10 03.6	138.36	18	13 36 46.70	18.594	6 44 17.7	130.93
19	12 08 41.00	19.124	3 56 13.2	138.43	19	13 38 38.27	18.598	6 57 22.2	130.57
20	12 10 35.67	19.098	3 42 22.5	138.47	20	13 40 29.87	18.603	7 10 24.5	130.20
21	12 12 30.18	19.073	3 28 31.6	138.51	21	13 42 21.50	18.607	7 23 24.6	129.83
22	12 14 24.55	19.049	3 14 40.4	138.55	22	13 44 13.15	18.612	7 36 22.5	129.45
23	12 16 18.77	19.024	3 00 49.0	138.57	23	13 46 04.84	18.618	7 49 18.0	129.06
24	12 18 12.84	19.001	N. 2 46 57.6	138.58	24	13 47 56.56	18.623	S. 8 02 11.2	128.67

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Monday 17.					Wednesday 19.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	15 47 56.56	18.623	S. 8 02 11.2	128.67	00	15 19 04.02	19.527	S. 17 20 16.9	101.15
01	13 49 48.32	18.631	8 15 02.0	128.26	01	15 21 01.27	19.556	17 30 21.6	100.41
02	13 51 40.13	18.638	8 27 50.3	127.85	02	15 22 58.69	19.585	17 40 21.8	99.65
03	13 53 31.98	18.646	8 40 36.2	127.43	03	15 24 56.29	19.616	17 50 17.4	98.88
04	13 55 23.88	18.655	8 53 19.5	127.00	04	15 26 54.08	19.647	18 00 08.4	98.11
05	13 57 15.84	18.664	9 06 00.2	126.57	05	15 28 52.05	19.677	18 09 54.9	97.36
06	13 59 07.85	18.673	9 18 38.3	126.13	06	15 30 50.20	19.708	18 19 36.7	96.57
07	14 00 59.92	18.684	9 31 13.8	125.68	07	15 32 48.54	19.739	18 29 13.7	95.78
08	14 02 52.06	18.695	9 43 46.5	125.22	08	15 34 47.07	19.771	18 38 46.1	94.99
09	14 04 44.26	18.706	9 56 16.4	124.76	09	15 36 45.79	19.803	18 48 13.6	94.19
10	14 06 36.53	18.718	10 08 43.6	124.29	10	15 38 44.70	19.835	18 57 36.4	93.38
11	14 08 28.87	18.730	10 21 07.9	123.81	11	15 40 43.81	19.868	19 06 54.2	92.57
12	14 10 21.29	18.743	10 33 29.3	123.33	12	15 42 43.11	19.900	19 16 07.2	91.75
13	14 12 13.79	18.757	10 45 47.8	122.83	13	15 44 42.61	19.933	19 25 15.2	90.92
14	14 14 06.37	18.770	10 58 03.3	122.33	14	15 46 42.30	19.966	19 34 18.2	90.08
15	14 15 59.03	18.785	11 10 15.8	121.83	15	15 48 42.20	19.999	19 43 16.2	89.24
16	14 17 51.79	18.801	11 22 25.3	121.32	16	15 50 42.39	20.033	19 52 09.1	88.39
17	14 19 44.64	18.816	11 34 31.6	120.79	17	15 52 42.59	20.067	20 00 56.9	87.53
18	14 21 37.58	18.832	11 46 34.8	120.27	18	15 54 43.09	20.101	20 09 39.5	86.67
19	14 23 30.62	18.848	11 58 34.8	119.73	19	15 56 43.80	20.135	20 18 16.9	85.80
20	14 25 23.76	18.866	12 10 31.6	119.18	20	15 58 44.71	20.169	20 26 49.1	84.93
21	14 27 17.01	18.883	12 22 25.0	118.63	21	16 00 45.83	20.204	20 35 16.0	84.04
22	14 29 10.36	18.902	12 34 15.2	118.08	22	16 02 47.16	20.238	20 43 37.6	83.15
23	14 31 03.83	18.920	S. 12 46 02.0	117.52	23	16 04 48.69	20.273	S. 20 51 53.8	82.25
Tuesday 18.					Thursday 20.				
00	14 32 57.40	18.938	S. 12 57 45.4	116.94	00	16 06 50.44	20.309	S. 21 00 04.6	81.34
01	14 34 51.09	18.958	13 09 25.3	116.37	01	16 08 52.40	20.344	21 08 09.9	80.43
02	14 36 44.89	18.978	13 21 01.8	115.79	02	16 10 54.57	20.379	21 16 09.8	79.52
03	14 38 38.82	18.998	13 32 34.8	115.19	03	16 12 56.95	20.414	21 24 04.1	78.58
04	14 40 32.87	19.019	13 44 04.1	114.59	04	16 14 59.54	20.450	21 31 52.8	77.65
05	14 42 27.05	19.041	13 55 29.9	113.99	05	16 17 02.35	20.486	21 39 35.9	76.72
06	14 44 21.36	19.063	14 06 52.0	113.38	06	16 19 05.37	20.522	21 47 13.4	75.78
07	14 46 15.81	19.085	14 18 10.4	112.76	07	16 21 08.61	20.558	21 54 45.2	74.82
08	14 48 10.38	19.108	14 29 25.1	112.13	08	16 23 12.06	20.593	22 02 11.2	73.85
09	14 50 05.10	19.131	14 40 36.0	111.49	09	16 25 15.73	20.629	22 09 31.4	72.89
10	14 51 59.95	19.154	14 51 43.0	110.85	10	16 27 19.61	20.665	22 16 45.9	71.92
11	14 53 54.95	19.178	15 02 46.2	110.21	11	16 29 23.71	20.702	22 23 54.4	70.93
12	14 55 50.09	19.203	15 13 45.5	109.56	12	16 31 28.03	20.738	22 30 57.1	69.95
13	14 57 45.38	19.228	15 24 40.9	108.89	13	16 33 32.56	20.773	22 37 53.8	68.95
14	14 59 40.82	19.253	15 35 32.2	108.22	14	16 35 37.31	20.810	22 44 44.5	67.95
15	15 01 36.41	19.278	15 46 19.5	107.55	15	16 37 42.28	20.847	22 51 29.2	66.95
16	15 03 32.16	19.305	15 57 02.8	106.87	16	16 39 47.47	20.883	22 58 07.9	65.93
17	15 05 28.07	19.332	16 07 41.9	106.17	17	16 41 52.87	20.918	23 04 40.4	64.91
18	15 07 24.14	19.358	16 18 16.8	105.48	18	16 43 58.48	20.954	23 11 06.8	63.88
19	15 09 20.36	19.385	16 28 47.6	104.78	19	16 46 04.32	20.990	23 17 27.0	62.85
20	15 11 16.76	19.413	16 39 14.1	104.06	20	16 48 10.36	21.025	23 23 41.0	61.81
21	15 13 13.32	19.441	16 49 36.3	103.34	21	16 50 16.62	21.062	23 29 48.7	60.76
22	15 15 10.05	19.469	16 59 54.2	102.63	22	16 52 23.10	21.098	23 35 50.1	59.71
23	15 17 06.95	19.498	17 10 07.8	101.89	23	16 54 29.79	21.133	23 41 45.2	58.65
24	15 19 04.02	19.527	S. 17 20 16.9	101.15	24	16 56 36.70	21.169	S. 23 47 33.9	57.58

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Right ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Friday 21.				Sunday 23.				
m s	s	° ' "	"		h m s	s	° ' "	"
56 36.70	21.169	S. 23 47 33.9	57.58	00	18 41 49.98	22.526	S. 26 09 43.8	00.33
58 43.82	21.204	23 53 16.2	56.51	01	18 44 05.19	22.543	26 09 37.9	01.65
00 51.15	21.239	23 58 52.0	55.43	02	18 46 20.50	22.559	26 09 24.0	02.97
02 58.69	21.274	24 04 21.3	54.33	03	18 48 35.90	22.574	26 09 02.3	04.28
05 06.44	21.310	24 09 44.0	53.24	04	18 50 51.39	22.590	26 08 32.6	05.62
07 14.41	21.345	24 15 00.2	52.15	05	18 53 06.98	22.605	26 07 54.9	06.95
09 22.58	21.378	24 20 09.8	51.04	06	18 55 22.65	22.618	26 07 09.2	08.28
11 30.95	21.413	24 25 12.7	49.93	07	18 57 38.40	22.632	26 06 15.6	09.60
13 39.54	21.448	24 30 08.9	48.82	08	18 59 54.23	22.645	26 05 14.0	10.93
15 48.32	21.481	24 34 58.5	47.69	09	19 02 10.14	22.658	26 04 04.4	12.28
17 57.31	21.516	24 39 41.2	46.56	10	19 04 26.12	22.668	26 02 46.7	13.62
20 06.51	21.549	24 44 17.2	45.43	11	19 06 42.16	22.679	26 01 21.0	14.96
22 15.90	21.582	24 48 46.3	44.28	12	19 08 58.27	22.690	25 59 47.2	16.30
24 25.49	21.615	24 53 08.5	43.13	13	19 11 14.44	22.699	25 58 05.4	17.64
26 35.28	21.648	24 57 23.8	41.98	14	19 13 30.66	22.708	25 56 15.5	18.99
28 45.27	21.681	25 01 32.2	40.82	15	19 15 46.94	22.718	25 54 17.5	20.34
30 55.45	21.713	25 05 33.6	39.65	16	19 18 03.27	22.725	25 52 11.4	21.68
33 05.82	21.745	25 09 28.0	38.48	17	19 20 19.64	22.732	25 49 57.3	23.03
35 16.39	21.777	25 13 15.4	37.31	18	19 22 36.05	22.738	25 47 35.0	24.38
37 27.14	21.808	25 16 55.7	36.12	19	19 24 52.50	22.745	25 45 04.7	25.73
39 38.08	21.838	25 20 28.8	34.93	20	19 27 08.99	22.750	25 42 26.3	27.08
41 49.20	21.868	25 23 54.8	33.73	21	19 29 25.50	22.754	25 39 39.7	28.44
44 00.50	21.899	25 27 13.6	32.53	22	19 31 42.04	22.759	25 36 45.0	29.79
46 11.99	21.929	S. 25 30 25.2	31.33	23	19 33 58.61	22.763	S. 25 33 42.2	31.14
Saturday 22.				Monday 24.				
48 23.65	21.958	S. 25 33 29.6	30.13	00	19 36 15.19	22.765	S. 25 30 31.3	32.49
50 35.49	21.988	25 36 26.7	28.90	01	19 38 31.79	22.768	25 27 12.3	33.85
52 47.50	22.016	25 39 16.4	27.68	02	19 40 48.40	22.769	25 23 45.1	35.20
54 59.68	22.044	25 41 58.9	26.46	03	19 43 05.02	22.771	25 20 09.9	36.55
57 12.03	22.073	25 44 33.9	25.23	04	19 45 21.65	22.771	25 16 26.5	37.91
59 24.55	22.100	25 47 01.6	23.99	05	19 47 38.27	22.771	25 12 35.0	39.26
01 37.23	22.126	25 49 21.8	22.74	06	19 49 54.90	22.771	25 08 35.4	40.61
03 50.06	22.153	25 51 34.5	21.50	07	19 52 11.52	22.761	25 04 27.7	41.96
06 03.06	22.179	25 53 39.8	20.25	08	19 54 28.13	22.768	25 00 11.9	43.31
08 16.21	22.204	25 55 37.5	18.99	09	19 56 44.73	22.765	24 55 48.0	44.65
10 29.51	22.229	25 57 27.7	17.73	10	19 59 01.31	22.763	24 51 16.1	45.99
12 42.96	22.254	25 59 10.3	16.47	11	20 01 17.88	22.759	24 46 36.1	47.34
14 56.56	22.278	26 00 45.3	15.20	12	20 03 34.42	22.755	24 41 48.0	48.69
17 10.30	22.302	26 02 12.7	13.93	13	20 05 50.94	22.751	24 36 51.8	50.03
19 24.18	22.325	26 03 32.4	12.65	14	20 08 07.43	22.746	24 31 47.6	51.37
21 38.20	22.348	26 04 44.5	11.37	15	20 10 23.89	22.740	24 26 35.4	52.71
23 52.35	22.369	26 05 48.8	10.08	16	20 12 40.31	22.733	24 21 15.1	54.04
26 06.63	22.391	26 06 45.5	08.80	17	20 14 56.69	22.727	24 15 46.9	55.38
28 21.04	22.412	26 07 34.4	07.50	18	20 17 13.03	22.720	24 10 10.6	56.71
30 35.57	22.432	26 08 15.5	06.20	19	20 19 29.33	22.713	24 04 26.4	58.03
32 50.22	22.452	26 08 48.8	04.90	20	20 21 45.58	22.705	23 58 34.2	59.37
35 04.99	22.472	26 09 14.3	03.60	21	20 24 01.79	22.697	23 52 34.0	60.68
37 19.88	22.491	26 09 32.0	02.30	22	20 26 17.94	22.687	23 46 26.0	62.00
39 34.88	22.508	26 09 41.9	00.98	23	20 28 34.03	22.678	23 40 10.0	63.33
41 49.98	22.526	S. 26 09 43.8	00.33	24	20 30 50.07	22.668	S. 23 33 46.1	64.63

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Tuesday 25.					Thursday 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	20 30 50.07	22.668	S. 23 33 46.1	64.63	00	22 17 56.74	21.909	S. 16 01 48.0	121.10
01	20 33 06.05	22.658	23 27 14.4	65.94	01	22 20 08.15	21.893	15 49 38.4	122.09
02	20 35 21.96	22.647	23 20 34.8	67.26	02	22 22 19.45	21.876	15 37 22.9	123.07
03	20 37 37.81	22.636	23 13 47.3	68.56	03	22 24 30.66	21.860	15 25 01.6	124.03
04	20 39 53.59	22.624	23 06 52.1	69.85	04	22 26 41.77	21.844	15 12 34.5	124.99
05	20 42 09.30	22.612	22 59 49.1	71.15	05	22 28 52.79	21.829	15 00 01.7	125.93
06	20 44 24.93	22.600	22 52 38.3	72.44	06	22 31 03.72	21.813	14 47 23.3	126.87
07	20 46 40.50	22.588	22 45 19.8	73.73	07	22 33 14.55	21.798	14 34 39.3	127.80
08	20 48 55.98	22.574	22 37 53.6	75.01	08	22 35 25.29	21.783	14 21 49.7	128.72
09	20 51 11.39	22.561	22 30 19.7	76.28	09	22 37 35.94	21.768	14 08 54.7	129.61
10	20 53 26.71	22.548	22 22 38.2	77.56	10	22 39 46.51	21.754	13 55 54.4	130.50
11	20 55 41.96	22.533	22 14 49.0	78.83	11	22 41 56.99	21.739	13 42 48.7	131.39
12	20 57 57.11	22.518	22 06 52.3	80.08	12	22 44 07.38	21.725	13 29 37.7	132.27
13	21 00 12.18	22.504	21 58 48.0	81.35	13	22 46 17.69	21.713	13 16 21.5	133.13
14	21 02 27.16	22.489	21 50 36.1	82.60	14	22 48 27.93	21.699	13 03 00.2	133.97
15	21 04 42.05	22.474	21 42 16.8	83.84	15	22 50 38.08	21.685	12 49 33.9	134.81
16	21 06 56.85	22.458	21 33 50.0	85.09	16	22 52 48.15	21.673	12 36 02.5	135.63
17	21 09 11.55	22.443	21 25 15.7	86.33	17	22 54 58.16	21.662	12 22 26.3	136.44
18	21 11 26.17	22.428	21 16 34.1	87.55	18	22 57 08.09	21.649	12 08 45.2	137.25
19	21 13 40.69	22.411	21 07 45.1	88.78	19	22 59 17.95	21.638	11 54 59.3	138.04
20	21 15 55.10	22.394	20 58 48.8	89.99	20	23 01 27.74	21.627	11 41 08.7	138.82
21	21 18 09.42	22.379	20 49 45.2	91.21	21	23 03 37.47	21.616	11 27 13.5	139.58
22	21 20 23.65	22.363	20 40 34.3	92.42	22	23 05 47.13	21.606	11 13 13.7	140.34
23	21 22 37.77	22.345	S. 20 31 16.2	93.62	23	23 07 56.74	21.596	S. 10 59 09.4	141.08
Wednesday 26.					Friday 28.				
00	21 24 51.79	22.328	S. 20 21 50.9	94.81	00	23 10 06.28	21.586	S. 10 45 00.7	141.81
01	21 27 05.71	22.311	20 12 18.5	95.99	01	23 12 15.77	21.578	10 30 47.7	142.53
02	21 29 19.52	22.293	20 02 39.0	97.17	02	23 14 25.21	21.568	10 16 30.3	143.24
03	21 31 33.23	22.277	19 52 52.5	98.34	03	23 16 34.59	21.560	10 02 08.8	143.93
04	21 33 46.84	22.259	19 42 58.9	99.51	04	23 18 43.93	21.553	9 47 43.2	144.61
05	21 36 00.34	22.241	19 32 58.4	100.67	05	23 20 53.22	21.545	9 33 13.5	145.28
06	21 38 13.73	22.223	19 22 50.9	101.82	06	23 23 02.47	21.538	9 18 39.9	145.93
07	21 40 27.02	22.206	19 12 36.6	102.95	07	23 25 11.68	21.533	9 04 02.4	146.57
08	21 42 40.20	22.188	19 02 15.5	104.09	08	23 27 20.86	21.527	8 49 21.1	147.19
09	21 44 53.28	22.171	18 51 47.5	105.22	09	23 29 30.00	21.521	8 34 36.1	147.81
10	21 47 06.25	22.153	18 41 12.9	106.33	10	23 31 39.11	21.516	8 19 47.4	148.42
11	21 49 19.11	22.135	18 30 31.5	107.45	11	23 33 48.19	21.512	8 04 55.1	149.00
12	21 51 31.87	22.118	18 19 43.5	108.55	12	23 35 57.25	21.508	7 49 59.4	149.57
13	21 53 44.52	22.100	18 08 48.9	109.64	13	23 38 06.29	21.505	7 35 00.3	150.13
14	21 55 57.07	22.082	17 57 47.8	110.73	14	23 40 15.31	21.502	7 19 57.8	150.68
15	21 58 09.50	22.063	17 46 40.1	111.82	15	23 42 24.31	21.499	7 04 52.1	151.21
16	22 00 21.83	22.047	17 35 26.0	112.88	16	23 44 33.30	21.498	6 49 43.3	151.73
17	22 02 34.06	22.029	17 24 05.5	113.94	17	23 46 42.29	21.497	6 34 31.4	152.24
18	22 04 46.18	22.012	17 12 38.7	114.98	18	23 48 51.26	21.496	6 19 16.4	152.73
19	22 06 58.20	21.994	17 01 05.7	116.03	19	23 51 00.24	21.496	6 03 58.6	153.20
20	22 09 10.11	21.977	16 49 26.4	117.07	20	23 53 09.21	21.497	5 48 38.0	153.66
21	22 11 21.92	21.960	16 37 40.9	118.09	21	23 55 18.20	21.498	5 33 14.7	154.11
22	22 13 33.63	21.943	16 25 49.3	119.11	22	23 57 27.19	21.499	5 17 48.7	154.55
23	22 15 45.24	21.926	16 13 51.6	120.11	23	23 59 36.19	21.502	5 02 20.1	154.97
24	22 17 56.74	21.909	S. 16 01 48.0	121.10	24	00 01 45.21	21.505	S. 4 46 49.1	155.37

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. inrom.
Saturday 29.					Sunday 30.				
	h m s		° ' "			h m s		° ' "	
00	00 01 45.21	21.505	S. 4 46 49.1	155.37	00	00 53 35.88	21.761	N. 1 33 55.3	160.39
01	00 03 54.25	21.508	4 31 15.7	155.75	01	00 55 46.50	21.779	1 49 57.7	160.39
02	00 06 03.31	21.512	4 15 40.1	156.13	02	00 57 57.23	21.798	2 06 00.0	160.38
03	00 08 12.39	21.517	4 00 02.2	156.49	03	01 00 08.08	21.819	2 22 02.3	160.36
04	00 10 21.51	21.523	3 44 22.2	156.83	04	01 02 19.06	21.840	2 38 04.3	160.31
05	00 12 30.66	21.528	3 28 40.2	157.16	05	01 04 30.16	21.861	2 54 06.0	160.25
06	00 14 39.85	21.534	3 12 56.3	157.47	06	01 06 41.39	21.883	3 10 07.3	160.17
07	00 16 49.07	21.541	2 57 10.6	157.77	07	01 08 52.76	21.906	3 26 08.0	160.07
08	00 18 58.34	21.549	2 41 23.1	158.05	08	01 11 04.26	21.929	3 42 08.1	159.96
09	00 21 07.66	21.558	2 25 34.0	158.32	09	01 13 15.91	21.953	3 58 07.5	159.83
10	00 23 17.03	21.567	2 09 43.3	158.57	10	01 15 27.70	21.978	4 14 06.1	159.68
11	00 25 26.46	21.577	1 53 51.2	158.80	11	01 17 39.65	22.003	4 30 03.7	159.51
12	00 27 35.95	21.587	1 37 57.7	159.03	12	01 19 51.74	22.028	4 46 00.2	159.33
13	00 29 45.50	21.598	1 22 02.9	159.23	13	01 22 03.99	22.056	5 01 55.6	159.13
14	00 31 55.12	21.609	1 06 07.0	159.41	14	01 24 16.41	22.083	5 17 49.8	158.92
15	00 34 04.81	21.621	0 50 10.0	159.58	15	01 26 28.99	22.111	5 33 42.6	158.68
16	00 36 14.57	21.634	0 34 12.0	159.73	16	01 28 41.74	22.139	5 49 33.9	158.42
17	00 38 24.42	21.648	0 18 13.2	159.88	17	01 30 54.66	22.168	6 05 23.6	158.15
18	00 40 34.35	21.662	S. 0 02 13.5	160.00	18	01 33 07.76	22.198	6 21 11.7	157.87
19	00 42 44.36	21.677	N. 0 13 46.8	160.10	19	01 35 21.04	22.228	6 36 58.0	157.55
20	00 44 54.47	21.693	0 29 47.7	160.19	20	01 37 34.50	22.259	6 52 42.3	157.23
21	00 47 04.67	21.708	0 45 49.1	160.27	21	01 39 48.15	22.292	7 08 24.7	156.89
22	00 49 14.97	21.725	" 1 01 50.9	160.33	22	01 42 02.00	22.323	7 24 05.0	156.53
23	00 51 25.37	21.743	1 17 53.0	160.37	23	01 44 16.03	22.356	7 39 43.0	156.14
24	00 53 35.88	21.761	N. 1 33 55.3	160.39	24	01 46 30.27	22.390	N. 7 55 18.7	155.75

PHASES OF THE MOON.

								h m
Sept.	6	(Last Quarter	..	..	..	..	..	22 35.0
"	14	☉ New Moon	..	..	..	..	..	01 20.7
"	22	) First Quarter	..	..	..	..	..	02 57.7
"	29	○ Full Moon	..	..	..	..	..	12 42.5
								h
Sept.	4	(Perigee	..	..	..	..	..	17.3
"	20	(Apogee	..	..	..	..	..	02.0

AT APPARENT NOON.

Date.	THE SUN'S				Sidereal Time of the Semi- diameter passing the Meridian.*	Equation of Time to be subtracted from Apparent Time.	Var. in 1 hour.
	Apparent Right Ascension	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.			
	h m s	s	° ' "	"	m s	m s	s
Mon.	1 12 29 32.92	9.050	S. 3 11 31.8	58.21	1 04.29	10 18.11	0.805
Tues.	2 12 33 10.26	9.063	3 34 47.7	58.12	1 04.33	10 37.27	0.792
Wed.	3 12 36 47.93	9.076	3 58 01.3	58.01	1 04.38	10 56.11	0.778
Thur.	4 12 40 25.94	9.091	4 21 12.1	57.89	1 04.43	11 14.60	0.763
Frid.	5 12 44 04.32	9.107	4 44 20.0	57.76	1 04.49	11 32.72	0.747
Sat.	6 12 47 43.09	9.124	5 07 24.6	57.62	1 04.54	11 50.45	0.731
Sun.	7 12 51 22.27	9.141	5 30 25.4	57.45	1 04.60	12 07.78	0.713
Mon.	8 12 55 01.88	9.159	5 53 22.2	57.28	1 04.66	12 24.68	0.695
Tues.	9 12 58 41.93	9.178	6 16 14.5	57.08	1 04.73	12 41.13	0.676
Wed.	10 13 02 22.45	9.198	6 39 02.0	56.87	1 04.79	12 57.13	0.657
Thur.	11 13 06 03.44	9.218	7 01 44.3	56.65	1 04.86	13 12.64	0.636
Frid.	12 13 09 44.93	9.239	7 24 20.9	56.40	1 04.94	13 27.67	0.615
Sat.	13 13 13 26.93	9.261	7 46 51.5	56.14	1 05.01	13 42.18	0.594
Sun.	14 13 17 09.46	9.283	8 09 15.7	55.87	1 05.09	13 56.17	0.572
Mon.	15 13 20 52.52	9.306	8 31 33.0	55.57	1 05.17	14 09.62	0.549
Tues.	16 13 24 36.14	9.329	8 53 43.1	55.27	1 05.26	14 22.52	0.526
Wed.	17 13 28 20.34	9.353	9 15 45.6	54.94	1 05.34	14 34.85	0.502
Thur.	18 13 32 05.11	9.378	9 37 40.0	54.59	1 05.43	14 46.59	0.477
Frid.	19 13 35 50.49	9.403	9 59 26.0	54.23	1 05.52	14 57.74	0.452
Sat.	20 13 39 36.48	9.429	10 21 03.1	53.86	1 05.61	15 08.27	0.426
Sun.	21 13 43 23.11	9.456	10 42 30.9	53.46	1 05.71	15 18.18	0.399
Mon.	22 13 47 10.38	9.483	11 03 49.2	53.05	1 05.81	15 27.44	0.372
Tues.	23 13 50 58.31	9.511	11 24 57.3	52.62	1 05.91	15 36.04	0.344
Wed.	24 13 54 46.91	9.540	11 45 55.0	52.18	1 06.01	15 43.96	0.316
Thur.	25 13 58 36.21	9.569	12 06 41.9	51.72	1 06.11	15 51.20	0.287
Frid.	26 14 02 26.21	9.598	12 27 17.6	51.25	1 06.22	15 57.74	0.257
Sat.	27 14 06 16.94	9.629	12 47 41.6	50.76	1 06.32	16 03.55	0.227
Sun.	28 14 10 08.40	9.660	13 07 53.7	50.25	1 06.43	16 08.63	0.196
Mon.	29 14 14 00.62	9.692	13 27 53.4	49.73	1 06.54	16 12.95	0.164
Tues.	30 14 17 53.61	9.724	13 47 40.5	49.19	1 06.65	16 16.50	0.132
Wed.	31 14 21 47.40	9.758	14 07 14.4	48.64	1 06.76	16 19.27	0.099
Thur.	32 14 25 41.98	9.791	S. 14 26 34.8	48.07	1 06.88	16 21.23	0.065

*Mean Time of the Semidiameter passing may be found by subtracting 0.18 from the Sidereal Time.

OCTOBER, 1928.

III

AT MEAN NOON.

THE SUN'S				Equation of Time, to be subtracted from Apparent Time.	Sidereal Time.
Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*			
h m s	° ' "	' "	m s	h m s	
12 29 34.47	S. 3 11 41.8	16 00.44	10 18.25	12 39 52.72	
12 33 11.87	3 34 58.0	16 00.72	10 37.41	12 43 49.28	
12 36 49.58	3 58 11.8	16 00.99	10 56.25	12 47 45.83	
12 40 27.64	4 21 23.0	16 01.26	11 14.74	12 51 42.38	
12 44 06.07	4 44 31.2	16 01.53	11 32.86	12 55 38.94	
12 47 44.89	5 07 36.0	16 01.80	11 50.60	12 59 35.49	
12 51 24.12	5 30 37.1	16 02.07	12 07.92	13 03 32.04	
12 55 03.77	5 53 34.1	16 02.34	12 24.82	13 07 28.60	
12 58 43.87	6 16 26.6	16 02.61	12 41.28	13 11 25.15	
13 02 24.43	6 39 14.3	16 02.89	12 57.27	13 15 21.70	
13 06 05.47	7 01 56.7	16 03.16	13 12.78	13 19 18.26	
13 09 47.01	7 24 33.5	16 03.43	13 27.81	13 23 14.81	
13 13 29.05	7 47 04.3	16 03.71	13 42.32	13 27 11.36	
13 17 11.61	8 09 28.6	16 03.99	13 56.31	13 31 07.92	
13 20 54.72	8 31 46.1	16 04.26	14 09.75	13 35 04.47	
13 24 38.38	8 53 56.3	16 04.54	14 22.65	13 39 01.03	
13 28 22.61	9 15 58.9	16 04.82	14 34.97	13 42 57.58	
13 32 07.42	9 37 53.4	16 05.09	14 46.71	13 46 54.14	
13 35 52.84	9 59 39.5	16 05.37	14 57.85	13 50 50.69	
13 39 38.86	10 21 16.7	16 05.65	15 08.38	13 54 47.24	
13 43 25.52	10 42 44.6	16 05.92	15 18.18	13 58 43.80	
13 47 12.82	11 04 02.8	16 06.19	15 27.53	14 02 40.35	
13 51 00.78	11 25 11.0	16 06.47	15 36.13	14 06 36.91	
13 54 49.42	11 46 08.7	16 06.74	15 44.05	14 10 33.46	
13 58 38.74	12 06 55.6	16 07.01	15 51.28	14 14 30.02	
14 02 28.77	12 27 31.2	16 07.27	15 57.81	14 18 26.57	
14 06 19.51	12 47 55.2	16 07.54	16 03.61	14 22 23.13	
14 10 11.00	13 08 07.2	16 07.80	16 08.68	14 26 19.68	
14 14 03.24	13 28 06.9	16 08.06	16 13.00	14 30 16.24	
14 17 56.25	13 47 53.8	16 08.31	16 16.54	14 34 12.79	
14 21 50.05	14 07 27.6	16 08.56	16 19.30	14 38 09.35	
14 25 44.65	S. 14 26 47.9	16 08.81	16 21.25	14 42 05.90	

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
	12h.	12h.			oh.	12h.	oh.	12h.
	° ' "	"		h m s	' "	' "	' "	' "
1	188 03 03.2	N. 0.01	0.0003337	23 18 15.86	16 24.06	16 25.32	60 11.66	60 16.27
2	189 02 05.2	0.14	.0002104	23 14 19.95	16 25.62	16 25.02	60 17.39	60 15.18
3	190 01 09.4	0.28	0.0000875	23 10 24.04	16 23.57	16 21.36	60 09.86	60 01.74
4	191 00 15.9	0.43	9.9999649	23 06 28.13	16 18.50	16 15.08	59 51.22	59 38.67
5	191 59 24.8	0.56	.9998424	23 02 32.23	16 11.21	16 07.01	59 24.49	59 09.08
6	192 58 36.0	0.67	.9997201	22 58 36.32	16 02.58	15 57.98	58 52.79	58 35.93
7	193 57 49.6	0.76	9.9995977	22 54 40.41	15 53.31	15 48.62	58 18.78	58 01.56
8	194 57 05.6	0.83	.9994753	22 50 44.50	15 43.95	15 39.35	57 44.43	57 27.53
9	195 56 23.9	0.86	.9993526	22 46 48.60	15 34.82	15 30.41	57 10.95	56 54.75
10	196 55 44.4	0.87	9.9992296	22 42 52.69	15 26.12	15 21.94	56 38.96	56 23.63
11	197 55 07.2	0.85	.9991064	22 38 56.78	15 17.88	15 13.96	56 08.74	55 54.34
12	198 54 32.1	0.79	.9989828	22 35 00.87	15 10.17	15 06.54	55 40.45	55 27.11
13	199 53 59.1	0.70	9.9988589	22 31 04.96	15 03.07	14 59.78	55 14.37	55 02.30
14	200 53 28.2	0.60	.9987347	22 27 09.06	14 56.70	14 53.85	54 50.98	54 40.54
15	201 52 59.3	0.49	.9986102	22 23 13.15	14 51.28	14 49.01	54 31.08	54 22.76
16	202 52 32.3	0.37	9.9984856	22 19 17.24	14 47.09	14 45.56	54 15.72	54 10.11
17	203 52 07.2	0.25	.9983610	22 15 21.33	14 44.47	14 43.85	54 06.09	54 03.84
18	204 51 44.0	0.13	.9982364	22 11 25.42	14 43.75	14 44.22	54 03.48	54 05.18
19	205 51 22.5	N. 0.01	9.9981119	22 07 29.52	14 45.28	14 46.96	54 09.06	54 15.24
20	206 51 02.9	S. 0.09	.9979877	22 03 33.61	14 49.30	14 52.30	54 23.82	54 34.84
21	207 50 45.0	0.17	.9978639	21 59 37.70	14 55.98	15 00.33	54 48.35	55 04.34
22	208 50 28.8	0.23	9.9977406	21 55 41.79	15 05.35	15 10.99	55 22.73	55 43.45
23	209 50 14.3	0.26	.9976179	21 51 45.88	15 17.21	15 23.96	56 06.29	56 31.05
24	210 50 01.6	0.25	.9974962	21 47 49.97	15 31.14	15 38.65	56 57.41	57 24.99
25	211 49 50.5	0.22	9.9973754	21 43 54.06	15 46.37	15 54.15	57 53.32	58 21.86
26	212 49 41.1	0.16	.9972558	21 39 58.15	16 01.82	16 09.21	58 50.02	59 17.15
27	213 49 33.6	S. 0.07	.9971375	21 36 02.25	16 16.13	16 22.40	59 42.55	60 05.55
28	214 49 27.8	N. 0.04	9.9970206	21 32 06.34	16 27.83	16 32.27	60 25.48	60 41.78
29	215 49 24.0	0.16	.9969053	21 28 10.43	16 35.59	16 37.69	60 53.95	61 01.66
30	216 49 22.1	0.30	.9967915	21 24 14.52	16 38.52	16 38.10	61 04.74	61 03.17
31	217 49 22.2	0.44	.9966792	21 20 18.61	16 36.45	16 33.67	60 57.15	60 46.93
32	218 49 24.3	N. 0.58	9.9965685	21 16 22.70	16 29.88	16 25.22	60 33.01	60 15.92

MEAN TIME.

Day of the Month.	THE MOON'S							
	Longitude.		Latitude.		Age.	Meridian Passage.		
	ob.	12h.	ob.	12h.	ob.	Upper.	Lower.	
	° ' "	° ' "	° ' "	° ' "	d	h m	h m	
1	37 33 31.5	34 53 56.2	S. 2 52 39.8	S. 2 18 48.8	16.94	01 11.0	13 37.2	
2	42 14 22.8	49 34 03.4	1 42 36.6	S. 1 04 43.5	17.94	02 04.0	14 31.5	
3	56 52 15.3	64 08 22.1	S. 0 25 51.5	N. 0 13 17.1	18.94	02 59.7	15 28.8	
4	71 21 54.2	78 32 28.6	N. 0 52 00.9	1 29 40.6	19.94	03 58.5	16 28.7	
5	85 39 48.5	93 43 42.9	2 05 40.0	2 39 26.7	20.94	04 59.3	17 29.9	
6	99 44 05.5	106 40 53.6	3 10 32.1	3 38 32.1	21.94	06 00.3	18 30.2	
7	113 54 07.8	120 23 50.0	4 03 06.4	4 23 59.3	22.94	06 59.5	19 27.8	
8	127 10 03.6	133 52 52.2	4 40 58.8	4 53 56.8	23.94	07 55.2	20 21.5	
9	140 32 19.6	147 08 28.7	5 02 49.0	5 07 34.1	24.94	08 46.9	21 11.3	
10	153 41 22.0	160 11 01.6	5 08 14.4	5 04 55.1	25.94	09 34.8	21 57.6	
11	166 37 29.1	173 00 45.5	4 57 44.4	4 46 52.8	26.94	10 19.7	22 41.3	
12	179 20 52.4	185 37 51.5	4 32 33.6	4 15 01.4	27.94	11 02.5	23 23.5	
13	191 51 46.0	198 02 39.7	3 54 33.4	3 31 27.5	28.94	11 44.3	* *	
14	204 10 38.7	210 15 50.8	3 06 03.0	2 38 40.0	0.34	12 26.0	00 05.1	
15	216 18 26.4	222 18 38.4	2 09 38.6	1 39 19.5	1.34	13 08.5	00 47.1	
16	228 16 42.5	234 12 57.2	1 08 02.9	N. 0 36 08.9	2.34	13 52.4	01 30.2	
17	240 07 43.8	246 01 26.4	N. 0 03 57.0	S. 0 28 13.7	3.34	14 38.2	02 15.0	
18	251 54 32.0	257 47 29.9	S. 1 00 04.8	1 31 18.2	4.34	15 26.1	03 01.9	
19	263 40 52.0	269 35 12.0	2 01 36.7	2 30 43.0	5.34	16 16.0	03 50.9	
20	275 31 05.6	281 29 09.5	2 58 20.4	3 24 11.9	6.34	17 07.0	04 41.4	
21	287 30 01.8	293 34 20.5	3 48 00.9	4 09 30.3	7.34	17 58.5	05 32.8	
22	299 42 43.4	305 55 46.9	4 28 23.1	4 44 21.7	8.34	18 49.6	06 24.1	
23	312 14 05.6	318 38 10.9	4 57 09.0	5 06 27.4	9.34	19 39.8	07 14.8	
24	325 08 29.8	331 45 24.0	5 12 00.3	5 13 32.0	10.34	20 28.9	08 04.5	
25	338 29 08.0	345 19 48.8	5 10 48.6	5 03 39.0	11.34	21 17.6	08 53.3	
26	352 17 23.7	359 21 40.4	4 51 55.6	4 35 35.6	12.34	22 06.5	09 42.0	
27	6 32 15.7	13 48 35.9	4 14 42.5	3 49 26.3	13.34	22 56.7	10 31.4	
28	31 09 57.5	28 35 27.9	3 20 04.5	2 47 02.6	14.34	23 49.2	11 22.6	
29	36 04 07.3	43 34 50.9	2 10 53.2	1 32 15.9	15.34	* *	12 16.7	
30	51 06 31.5	58 38 02.1	S. 0 51 55.2	S. 0 10 39.1	16.34	00 45.1	13 14.5	
31	66 08 18.1	73 36 20.0	N. 0 30 42.9	N. 1 11 22.3	17.34	01 44.7	14 15.7	
32	81 01 15.1	88 22 18.3	N. 1 50 33.1	N. 2 27 33.7	18.34	02 47.2	15 19.0	

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Monday 1.					Wednesday 3.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	01 46 30.27	22.390	N. 7 55 18.7	155.75	00	03 38 42.80	24.478	N. 19 02 49.9	115.56
01	01 48 44.71	22.423	8 10 52.0	155.33	01	03 41 09.81	24.526	19 14 19.5	114.30
02	01 50 59.35	22.458	8 26 22.7	154.90	02	03 43 37.11	24.574	19 25 41.5	113.03
03	01 53 14.21	22.493	8 41 50.8	154.46	03	03 46 04.70	24.621	19 36 55.8	111.73
04	01 55 29.27	22.528	8 57 16.2	153.98	04	03 48 32.56	24.667	19 48 02.3	110.43
05	01 57 44.55	22.566	9 12 38.6	153.49	05	03 51 00.70	24.714	19 59 00.9	109.10
06	02 00 00.06	22.603	9 27 58.1	152.99	06	03 53 29.13	24.760	20 09 51.5	107.77
07	02 02 15.78	22.639	9 43 14.5	152.47	07	03 55 57.82	24.805	20 20 34.1	106.42
08	02 04 31.73	22.678	9 58 27.7	151.92	08	03 58 26.79	24.851	20 31 08.5	105.05
09	02 06 47.91	22.715	10 13 37.5	151.36	09	04 00 56.03	24.896	20 41 34.7	103.68
10	02 09 04.31	22.754	10 28 44.0	150.78	10	04 03 25.54	24.940	20 51 52.6	102.28
11	02 11 20.96	22.794	10 43 46.9	150.18	11	04 05 55.31	24.984	21 02 02.1	100.87
12	02 13 37.84	22.833	10 58 46.2	149.58	12	04 08 25.35	25.028	21 12 03.0	99.44
13	02 15 54.96	22.874	11 13 41.8	148.94	13	04 10 55.65	25.072	21 21 55.4	98.01
14	02 18 12.33	22.915	11 28 33.5	148.28	14	04 13 26.21	25.115	21 31 39.1	96.55
15	02 20 29.94	22.957	11 43 21.2	147.62	15	04 15 57.03	25.157	21 41 14.0	95.08
16	02 22 47.81	22.999	11 58 04.9	146.93	16	04 18 28.09	25.198	21 50 40.1	93.62
17	02 25 05.93	23.041	12 12 44.4	146.23	17	04 20 59.41	25.240	21 59 57.4	92.13
18	02 27 24.30	23.083	12 27 19.6	145.50	18	04 23 30.97	25.280	22 09 05.6	90.62
19	02 29 42.93	23.126	12 41 50.4	144.76	19	04 26 02.77	25.320	22 18 04.8	89.11
20	02 32 01.81	23.169	12 56 16.7	144.00	20	04 28 34.81	25.359	22 26 54.9	87.58
21	02 34 20.96	23.213	13 10 38.4	143.22	21	04 31 07.08	25.398	22 35 35.8	86.04
22	02 36 40.37	23.258	13 24 55.3	142.41	22	04 33 39.58	25.435	22 44 07.4	84.49
23	02 39 00.05	23.303	N. 13 39 07.5	141.62	23	04 36 12.30	25.473	N. 22 52 29.7	82.93
Tuesday 2.					Thursday 4.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	02 41 20.00	23.347	N. 13 53 14.7	140.78	00	04 38 45.25	25.509	N. 23 00 42.5	81.35
01	02 43 40.21	23.392	14 07 16.8	139.93	01	04 41 18.41	25.545	23 08 45.9	79.77
02	02 46 00.70	23.438	14 21 13.8	139.07	02	04 43 51.79	25.579	23 16 39.7	78.17
03	02 48 21.47	23.483	14 35 05.6	138.18	03	04 46 25.36	25.613	23 24 23.9	76.57
04	02 50 42.50	23.529	14 48 51.9	137.27	04	04 48 59.14	25.647	23 31 58.5	74.95
05	02 53 03.82	23.577	15 02 32.8	136.35	05	04 51 33.12	25.678	23 39 23.3	73.32
06	02 55 25.42	23.623	15 16 08.1	135.42	06	04 54 07.28	25.708	23 46 38.3	71.68
07	02 57 47.29	23.669	15 29 37.8	134.46	07	04 56 41.62	25.739	23 53 43.5	70.04
08	03 00 09.45	23.717	15 43 01.6	133.48	08	04 59 16.15	25.769	24 00 38.8	68.39
09	03 02 31.89	23.763	15 56 19.5	132.48	09	05 01 50.85	25.797	24 07 24.2	66.73
10	03 04 54.61	23.811	16 09 31.4	131.48	10	05 04 25.71	25.824	24 13 59.5	65.05
11	03 07 17.62	23.858	16 22 37.2	130.45	11	05 07 00.74	25.851	24 20 24.8	63.38
12	03 09 40.91	23.906	16 35 36.8	129.41	12	05 09 35.92	25.876	24 26 40.0	61.68
13	03 12 04.49	23.953	16 48 30.1	128.34	13	05 12 11.25	25.900	24 32 45.0	59.99
14	03 14 28.35	24.001	17 01 16.9	127.26	14	05 14 46.72	25.923	24 38 39.9	58.29
15	03 16 52.50	24.049	17 13 57.2	126.17	15	05 17 22.33	25.945	24 44 24.5	56.58
16	03 19 16.94	24.098	17 26 30.9	125.06	16	05 19 58.06	25.965	24 49 58.8	54.86
17	03 21 41.67	24.146	17 38 57.9	123.93	17	05 22 33.91	25.985	24 55 22.8	53.14
18	03 24 06.69	24.193	17 51 18.0	122.78	18	05 25 09.88	26.004	25 00 36.5	51.42
19	03 26 31.99	24.241	18 03 31.2	121.62	19	05 27 45.96	26.021	25 05 39.8	49.68
20	03 28 57.58	24.289	18 15 37.4	120.43	20	05 30 22.13	26.037	25 10 32.7	47.94
21	03 31 23.46	24.337	18 27 36.4	119.24	21	05 32 58.40	26.052	25 15 15.1	46.20
22	03 33 49.62	24.384	18 39 28.3	118.03	22	05 35 34.75	26.066	25 19 47.1	44.45
23	03 36 16.07	24.432	18 51 12.8	116.80	23	05 38 11.19	26.078	25 24 08.5	42.69
24	03 38 42.80	24.478	N. 19 02 49.9	115.56	24	05 40 47.69	26.089	N. 25 28 19.4	40.94

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Friday 5.					Sunday 7.				
	h m s	s	o ' "	"		h m s	s	o ' "	"
00	05 40 47.69	26.089	N. 25 28 19.4	40.94	00	07 44 47.41	25.091	N. 25 22 57.3	41.56
01	05 43 24.26	26.099	25 32 19.8	39.18	01	07 47 17.81	25.041	25 18 43.3	43.12
02	05 46 00.88	26.108	25 36 09.6	37.41	02	07 49 47.90	24.991	25 14 19.9	44.67
03	05 48 37.55	26.115	25 39 48.7	35.64	03	07 52 17.70	24.940	25 09 47.3	46.20
04	05 51 14.26	26.120	25 43 17.3	33.88	04	07 54 47.18	24.888	25 05 05.5	47.73
05	05 53 50.99	26.124	25 46 35.3	32.11	05	07 57 16.36	24.836	25 00 14.5	49.25
06	05 56 27.75	26.128	25 49 42.6	30.33	06	07 59 45.21	24.783	24 55 14.5	50.74
07	05 59 04.53	26.131	25 52 39.2	28.56	07	08 02 13.75	24.729	24 50 05.6	52.23
08	06 01 41.32	26.131	25 55 25.3	26.78	08	08 04 41.96	24.675	24 44 47.7	53.72
09	06 04 18.10	26.129	25 58 00.6	25.00	09	08 07 09.85	24.620	24 39 21.0	55.18
10	06 06 54.87	26.128	26 00 25.3	23.23	10	08 09 37.40	24.563	24 33 45.5	56.64
11	06 09 31.63	26.125	26 02 39.4	21.45	11	08 12 04.61	24.507	24 28 01.3	58.08
12	06 12 08.37	26.120	26 04 42.7	19.67	12	08 14 31.48	24.450	24 22 08.5	59.51
13	06 14 45.07	26.113	26 06 35.4	17.89	13	08 16 58.01	24.392	24 16 07.2	60.93
14	06 17 21.73	26.106	26 08 17.4	16.12	14	08 19 24.18	24.333	24 09 57.3	62.34
15	06 19 58.34	26.097	26 09 48.8	14.34	15	08 21 50.01	24.275	24 03 39.1	63.73
16	06 22 34.89	26.087	26 11 09.5	12.57	16	08 24 15.48	24.215	23 57 12.6	65.11
17	06 25 11.38	26.075	26 12 19.6	10.79	17	08 26 40.59	24.155	23 50 37.8	66.48
18	06 27 47.79	26.062	26 13 19.0	09.03	18	08 29 05.34	24.096	23 43 54.8	67.84
19	06 30 24.12	26.048	26 14 07.9	07.26	19	08 31 29.74	24.035	23 37 03.7	69.18
20	06 33 00.36	26.032	26 14 46.1	05.49	20	08 33 53.76	23.973	23 30 04.7	70.50
21	06 35 36.50	26.015	26 15 13.8	03.74	21	08 36 17.42	23.913	23 22 57.7	71.83
22	06 38 12.54	25.997	26 15 31.0	01.98	22	08 38 40.71	23.851	23 15 42.8	73.13
23	06 40 48.46	25.977	N. 26 15 37.5	00.22	23	08 41 03.63	23.788	N. 23 08 20.1	74.42
Saturday 6.					Monday 8.				
00	06 43 24.26	25.956	N. 26 15 33.6	01.53	00	08 43 26.17	23.726	N. 23 00 49.8	75.68
01	06 45 59.93	25.933	26 15 19.2	03.28	01	08 45 48.34	23.663	22 53 11.9	76.95
02	06 48 35.46	25.910	26 14 54.3	05.02	02	08 48 10.13	23.600	22 45 26.4	78.21
03	06 51 10.85	25.885	26 14 19.0	06.75	03	08 50 31.54	23.537	22 37 33.4	79.44
04	06 53 46.08	25.858	26 13 33.3	08.48	04	08 52 52.57	23.474	22 29 33.1	80.66
05	06 56 21.15	25.831	26 12 37.2	10.21	05	08 55 13.23	23.411	22 21 25.5	81.87
06	06 58 56.05	25.803	26 11 30.8	11.93	06	08 57 33.50	23.347	22 13 10.7	83.06
07	07 01 30.78	25.773	26 10 14.0	13.64	07	08 59 53.39	23.283	22 04 48.8	84.24
08	07 04 05.32	25.742	26 08 47.1	15.34	08	09 02 12.90	23.219	21 56 19.8	85.41
09	07 06 39.68	25.709	26 07 09.9	17.05	09	09 04 32.02	23.155	21 47 43.9	86.57
10	07 09 13.83	25.675	26 05 22.5	18.74	10	09 06 50.76	23.092	21 39 01.0	87.71
11	07 11 47.78	25.641	26 03 25.0	20.43	11	09 09 09.12	23.028	21 30 11.4	88.83
12	07 14 21.52	25.605	26 01 17.4	22.10	12	09 11 27.09	22.963	21 21 15.0	89.95
13	07 16 55.04	25.568	25 58 59.8	23.78	13	09 13 44.68	22.899	21 12 12.0	91.04
14	07 19 28.33	25.528	25 56 32.1	25.44	14	09 16 01.88	22.835	21 03 02.5	92.13
15	07 22 01.38	25.489	25 53 54.5	27.09	15	09 18 18.70	22.772	20 53 46.5	93.19
16	07 24 34.20	25.450	25 51 07.0	28.73	16	09 20 35.14	22.708	20 44 24.2	94.25
17	07 27 06.78	25.408	25 48 09.7	30.38	17	09 22 51.19	22.643	20 34 55.5	95.30
18	07 29 39.10	25.365	25 45 02.5	32.00	18	09 25 06.86	22.580	20 25 20.6	96.33
19	07 32 11.16	25.322	25 41 45.7	33.62	19	09 27 22.15	22.517	20 15 39.6	97.34
20	07 34 42.96	25.278	25 38 19.1	35.23	20	09 29 37.06	22.453	20 05 52.5	98.35
21	07 37 14.49	25.233	25 34 43.0	36.82	21	09 31 51.58	22.389	19 55 59.4	99.33
22	07 39 45.75	25.186	25 30 57.3	38.42	22	09 34 05.73	22.327	19 46 00.5	100.30
23	07 42 16.72	25.138	25 27 02.0	40.00	23	09 36 19.50	22.263	19 35 55.8	101.27
24	07 44 47.41	25.091	N. 25 22 57.3	41.56	24	09 38 32.89	22.201	N. 19 25 45.3	102.22

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Tuesday 9.					Thursday 11.				
	h m s		° ' "			h m s		° ' "	
00	09 38 32.89	22.201	N. 19 25 45.3	102.22	00	11 18 36.12	19.080	N. 9 50 59.6	132.49
01	09 40 45.91	22.138	19 15 29.2	103.14	01	11 20 34.08	19.642	9 37 43.6	132.83
02	09 42 58.55	22.076	19 05 07.6	104.07	02	11 22 31.82	19.603	9 24 25.7	133.15
03	09 45 10.82	22.013	18 54 40.4	104.98	03	11 24 29.32	19.565	9 11 05.8	133.47
04	09 47 22.71	21.952	18 44 07.9	105.86	04	11 26 26.60	19.529	8 57 44.1	133.78
05	09 49 34.24	21.891	18 33.30.1	106.74	05	11 28 23.67	19.493	8 44 20.5	134.08
06	09 51 45.40	21.829	18 22 47.0	107.61	06	11 30 20.51	19.456	8 30 55.2	134.35
07	09 53 56.19	21.768	18 11 58.8	108.46	07	11 32 17.14	19.422	8 17 28.3	134.63
08	09 56 06.62	21.708	18 01 05.5	109.30	08	11 34 13.57	19.388	8 03 59.7	134.89
09	09 58 16.69	21.648	17 50 07.2	110.13	09	11 36 09.79	19.353	7 50 29.6	135.14
10	10 00 26.39	21.588	17 39 04.0	110.95	10	11 38 05.80	19.319	7 36 58.0	135.38
11	10 02 35.74	21.529	17 27 56.0	111.73	11	11 40 01.62	19.288	7 23 25.0	135.62
12	10 04 44.74	21.470	17 16 43.2	112.52	12	11 41 57.25	19.256	7 09 50.6	135.84
13	10 06 53.38	21.411	17 05 25.8	113.29	13	11 43 52.69	19.224	6 56 14.9	136.05
14	10 09 01.67	21.353	16 54 03.7	114.06	14	11 45 47.94	19.194	6 42 38.0	136.24
15	10 11 09.62	21.296	16 42 37.1	114.80	15	11 47 43.02	19.164	6 29 00.0	136.43
16	10 13 17.22	21.238	16 31 06.1	115.53	16	11 49 37.91	19.135	6 15 20.8	136.62
17	10 15 24.48	21.181	16 19 30.7	116.25	17	11 51 32.64	19.107	6 01 40.5	136.79
18	10 17 31.59	21.124	16 07 51.1	116.96	18	11 53 27.19	19.078	5 47 59.3	136.95
19	10 19 37.97	21.069	15 56 07.2	117.66	19	11 55 21.58	19.052	5 34 17.1	137.11
20	10 21 44.22	21.013	15 44 19.2	118.33	20	11 57 15.81	19.025	5 20 34.0	137.24
21	10 23 50.15	20.958	15 32 27.2	119.00	21	11 59 09.88	18.998	5 06 50.2	137.38
22	10 25 55.72	20.904	15 20 31.2	119.67	22	12 01 03.79	18.973	4 53 05.5	137.50
23	10 28 00.98	20.849	N. 15 08 31.2	120.31	23	12 02 57.55	18.948	N. 4 39 20.2	137.60
Wednesday 10.					Friday 12.				
	h m s		° ' "			h m s		° ' "	
00	10 30 05.91	20.796	N. 14 56 27.5	120.93	00	12 04 51.17	18.924	N. 4 25 34.3	137.70
01	10 32 10.53	20.743	14 44 20.0	121.56	01	12 06 44.64	18.901	4 11 47.8	137.80
02	10 34 14.83	20.691	14 32 08.8	122.16	02	12 08 37.98	18.878	3 58 00.7	137.88
03	10 36 18.82	20.638	14 19 54.1	122.75	03	12 10 31.18	18.856	3 44 13.2	137.96
04	10 38 22.49	20.587	14 07 35.8	123.34	04	12 12 24.25	18.835	3 30 25.2	138.03
05	10 40 25.86	20.536	13 55 14.0	123.91	05	12 14 17.20	18.814	3 16 36.9	138.07
06	10 42 28.92	20.486	13 42 48.9	124.47	06	12 16 10.02	18.794	3 02 48.4	138.11
07	10 44 31.69	20.436	13 30 20.4	125.02	07	12 18 02.73	18.773	2 48 59.6	138.15
08	10 46 34.15	20.387	13 17 48.7	125.54	08	12 19 55.32	18.756	2 35 10.6	138.18
09	10 48 36.33	20.338	13 05 13.9	126.06	09	12 21 47.80	18.738	2 21 21.4	138.20
10	10 50 38.21	20.290	12 52 36.0	126.55	10	12 23 40.17	18.719	2 07 32.2	138.20
11	10 52 39.81	20.243	12 39 55.0	127.08	11	12 25 32.43	18.703	1 53 43.0	138.20
12	10 54 41.12	20.196	12 27 11.1	127.56	12	12 27 24.60	18.687	1 39 53.8	138.19
13	10 56 42.16	20.150	12 14 24.3	128.03	13	12 29 16.67	18.671	1 26 04.7	138.17
14	10 58 42.92	20.103	12 01 34.8	128.49	14	12 31 08.65	18.657	1 12 15.8	138.14
15	11 00 43.40	20.058	11 48 42.4	128.95	15	12 33 00.55	18.643	0 58 27.0	138.10
16	11 02 43.62	20.014	11 35 47.4	129.38	16	12 34 52.36	18.628	0 44 38.6	138.05
17	11 04 43.57	19.970	11 22 49.8	129.81	17	12 36 44.08	18.615	0 30 50.4	138.00
18	11 06 43.26	19.928	11 09 49.7	130.23	18	12 38 35.74	18.603	0 17 02.6	137.93
19	11 08 42.70	19.884	10 56 47.1	130.63	19	12 40 27.32	18.591	N. 0 03 15.3	137.85
20	11 10 41.87	19.842	10 43 42.1	131.03	20	12 42 18.83	18.579	S. 0 10 31.6	137.78
21	11 12 40.80	19.801	10 30 34.8	131.41	21	12 44 10.27	18.568	0 24 18.0	137.68
22	11 14 39.48	19.760	10 17 25.2	131.78	22	12 46 01.65	18.559	0 38 03.8	137.58
23	11 16 37.92	19.720	10 04 13.5	132.13	23	12 47 52.98	18.550	0 51 49.0	137.48
24	11 18 36.12	19.680	N. 9 50 59.6	132.49	24	12 49 44.25	18.541	S. 1 05 33.5	137.35

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Saturday 13.					Monday 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	12 49 44.25	18.541	S. 1 05 33.5	137.35	00	14 18 50.63	18.798	S. 11 35 17.0	121.91
01	12 51 35.47	18.533	1 19 17.2	137.23	01	14 20 43.47	18.817	11 47 26.9	121.39
02	12 53 26.65	18.526	1 33 00.2	137.09	02	14 22 36.43	18.836	11 59 33.7	120.88
03	12 55 17.78	18.518	1 46 42.3	136.95	03	14 24 29.50	18.854	12 11 37.4	120.34
04	12 57 08.87	18.512	2 00 23.6	136.80	04	14 26 22.68	18.873	12 23 37.8	119.80
05	12 58 59.92	18.506	2 14 03.9	136.63	05	14 28 15.98	18.893	12 35 35.0	119.26
06	13 00 50.94	18.502	2 27 43.2	136.46	06	14 30 09.40	18.914	12 47 28.9	118.70
07	13 02 41.94	18.498	2 41 21.4	136.28	07	14 32 02.95	18.935	12 59 19.4	118.13
08	13 04 32.91	18.493	2 54 58.6	136.10	08	14 33 56.62	18.956	13 11 06.5	117.57
09	13 06 23.85	18.489	3 08 34.6	135.90	09	14 35 50.42	18.978	13 22 50.2	116.98
10	13 08 14.78	18.488	3 22 09.4	135.70	10	14 37 44.35	18.999	13 34 30.3	116.40
11	13 10 05.70	18.485	3 35 43.0	135.48	11	14 39 38.41	19.022	13 46 07.0	115.81
12	13 11 56.60	18.483	3 49 15.2	135.26	12	14 41 32.61	19.045	13 57 40.0	115.20
13	13 13 47.50	18.483	4 02 46.1	135.03	13	14 43 26.95	19.068	14 09 09.4	114.60
14	13 15 38.39	18.483	4 16 15.6	134.80	14	14 45 21.43	19.092	14 20 35.2	113.98
15	13 17 29.29	18.483	4 29 43.7	134.55	15	14 47 16.05	19.116	14 31 57.2	113.35
16	13 19 20.18	18.483	4 43 10.2	134.29	16	14 49 10.82	19.140	14 43 15.4	112.72
17	13 21 11.09	18.485	4 56 35.2	134.03	17	14 51 05.73	19.165	14 54 29.8	112.08
18	13 23 02.00	18.487	5 09 58.6	133.77	18	14 53 00.80	19.191	15 05 40.4	111.44
19	13 24 52.93	18.489	5 23 20.4	133.48	19	14 54 56.02	19.216	15 16 47.1	110.78
20	13 26 43.87	18.493	5 36 40.4	133.20	20	14 56 51.39	19.241	15 27 49.8	110.12
21	13 28 34.84	18.497	5 49 58.8	132.91	21	14 58 46.91	19.268	15 38 48.5	109.45
22	13 30 25.83	18.501	6 03 15.3	132.59	22	15 00 42.60	19.294	15 49 43.2	108.78
23	13 32 16.85	18.506	S. 6 16 29.9	132.28	23	15 02 38.44	19.321	S. 16 00 33.8	108.08
Sunday 14.					Tuesday 16.				
00	13 34 07.90	18.511	S. 6 29 42.7	131.97	00	15 04 34.45	19.348	S. 16 11 20.2	107.39
01	13 35 58.98	18.517	6 42 53.5	131.64	01	15 06 30.62	19.376	16 22 02.5	106.70
02	13 37 50.10	18.524	6 56 02.4	131.31	02	15 08 26.96	19.404	16 32 40.6	105.99
03	13 39 41.27	18.531	7 09 09.2	130.96	03	15 10 23.47	19.432	16 43 14.4	105.27
04	13 41 32.47	18.538	7 22 13.9	130.61	04	15 12 20.14	19.460	16 53 43.8	104.55
05	13 43 23.72	18.547	7 35 16.5	130.25	05	15 14 16.99	19.490	17 04 09.0	103.83
06	13 45 15.03	18.555	7 48 16.9	129.88	06	15 16 14.02	19.518	17 14 29.7	103.08
07	13 47 06.38	18.564	8 01 15.1	129.51	07	15 18 11.21	19.547	17 24 46.0	102.34
08	13 48 57.80	18.574	8 14 11.0	129.13	08	15 20 08.58	19.578	17 34 57.8	101.58
09	13 50 49.27	18.584	8 27 04.6	128.73	09	15 22 06.14	19.608	17 45 05.0	100.83
10	13 52 40.81	18.595	8 39 55.8	128.33	10	15 24 03.87	19.637	17 55 07.7	100.07
11	13 54 32.41	18.606	8 52 44.6	127.93	11	15 26 01.78	19.668	18 05 05.8	99.29
12	13 56 24.08	18.618	9 05 30.9	127.51	12	15 27 59.88	19.698	18 14 59.2	98.51
13	13 58 15.82	18.630	9 18 14.7	127.08	13	15 29 58.16	19.729	18 24 47.9	97.72
14	14 00 07.64	18.643	9 30 55.9	126.66	14	15 31 56.63	19.760	18 34 31.8	96.93
15	14 01 59.54	18.657	9 43 34.6	126.22	15	15 33 55.28	19.791	18 44 11.0	96.13
16	14 03 51.52	18.670	9 56 10.5	125.77	16	15 35 54.12	19.823	18 53 45.3	95.31
17	14 05 43.58	18.684	10 08 43.8	125.32	17	15 37 53.15	19.854	19 03 14.7	94.49
18	14 07 35.73	18.699	10 21 14.3	124.85	18	15 39 52.37	19.886	19 12 39.2	93.67
19	14 09 27.97	18.715	10 33 42.0	124.38	19	15 41 51.78	19.918	19 21 58.7	92.83
20	14 11 20.31	18.731	10 46 06.9	123.91	20	15 43 51.39	19.950	19 31 13.1	91.98
21	14 13 12.74	18.746	10 58 28.9	123.42	21	15 45 51.18	19.983	19 40 22.5	91.15
22	14 15 05.26	18.763	11 10 47.9	122.93	22	15 47 51.18	20.016	19 49 26.9	90.29
23	14 16 57.89	18.781	11 23 04.0	122.43	23	15 49 51.37	20.048	19 58 26.0	89.43
24	14 18 50.63	18.798	S. 11 35 17.0	121.91	24	15 51 51.75	20.080	S. 20 07 20.0	88.57

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Wednesday 17.					Friday 19.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	15 51 51.75	20.080	S. 20 07 20.0	88.57	00	17 32 02.53	21.615	S. 25 19 24.5	39.04
01	15 53 52.33	20.113	20 16 08.8	87.68	01	17 34 12.30	21.642	25 23 15.2	37.87
02	15 55 53.11	20.147	20 24 52.2	86.80	02	17 36 22.23	21.668	25 26 58.9	36.68
03	15 57 54.09	20.180	20 33 30.4	85.92	03	17 38 32.31	21.693	25 30 35.4	35.49
04	15 59 55.27	20.213	20 42 03.2	85.01	04	17 40 42.55	21.720	25 34 04.8	34.30
05	16 01 56.65	20.246	20 50 30.5	84.11	05	17 42 52.95	21.745	25 37 27.0	33.11
06	16 03 58.22	20.279	20 58 52.5	83.20	06	17 45 03.49	21.770	25 40 42.1	31.92
07	16 06 00.00	20.313	21 07 08.9	82.28	07	17 47 14.19	21.794	25 43 50.0	30.71
08	16 08 01.98	20.347	21 15 19.8	81.35	08	17 49 25.02	21.818	25 46 50.6	29.49
09	16 10 04.16	20.380	21 23 25.1	80.42	09	17 51 36.00	21.842	25 49 43.9	28.28
10	16 12 06.54	20.414	21 31 24.8	79.48	10	17 53 47.12	21.865	25 52 30.0	27.07
11	16 14 09.13	20.448	21 39 18.9	78.54	11	17 55 58.38	21.888	25 55 08.7	25.84
12	16 16 11.91	20.481	21 47 07.3	77.58	12	17 58 09.77	21.910	25 57 40.1	24.62
13	16 18 14.90	20.515	21 54 49.9	76.63	13	18 00 21.30	21.932	26 00 04.1	23.39
14	16 20 18.09	20.548	22 02 26.8	75.66	14	18 02 32.95	21.953	26 02 20.8	22.16
15	16 22 21.48	20.582	22 09 57.8	74.68	15	18 04 44.73	21.973	26 04 30.0	20.92
16	16 24 25.07	20.616	22 17 23.0	73.71	16	18 06 56.63	21.993	26 06 31.8	19.68
17	16 26 28.87	20.649	22 24 42.3	72.72	17	18 09 08.65	22.013	26 08 26.1	18.43
18	16 28 32.86	20.683	22 31 55.6	71.73	18	18 11 20.79	22.033	26 10 12.9	17.18
19	16 30 37.06	20.717	22 39 03.0	70.73	19	18 13 33.04	22.052	26 11 52.3	15.93
20	16 32 41.46	20.749	22 46 04.3	69.72	20	18 15 45.41	22.070	26 13 24.1	14.68
21	16 34 46.05	20.783	22 52 59.6	68.71	21	18 17 57.88	22.087	26 14 48.4	13.42
22	16 36 50.85	20.817	22 59 48.8	67.68	22	18 20 10.45	22.104	26 16 05.1	12.16
23	16 38 55.85	20.849	S. 23 06 31.8	66.66	23	18 22 23.13	22.122	S. 26 17 14.3	10.89
Thursday 18.					Saturday 20.				
00	16 41 01.04	20.882	S. 23 13 08.7	65.63	00	18 24 35.91	22.138	S. 26 18 15.8	09.62
01	16 43 06.43	20.915	23 19 39.3	64.58	01	18 26 48.78	22.153	26 19 09.7	08.35
02	16 45 12.02	20.948	23 26 03.7	63.54	02	18 29 01.75	22.168	26 19 56.0	07.08
03	16 47 17.81	20.981	23 32 21.8	62.49	03	18 31 14.80	22.183	26 20 34.7	05.81
04	16 49 23.79	21.013	23 38 33.6	61.43	04	18 33 27.94	22.197	26 21 05.7	04.53
05	16 51 29.97	21.046	23 44 39.0	60.37	05	18 35 41.16	22.209	26 21 29.0	03.24
06	16 53 36.34	21.078	23 50 38.0	59.29	06	18 37 54.45	22.223	26 21 44.6	01.96
07	16 55 42.90	21.109	23 56 30.5	58.22	07	18 40 07.83	22.235	26 21 52.5	00.68
08	16 57 49.65	21.142	24 02 16.6	57.14	08	18 42 21.27	22.247	26 21 52.8	00.60
09	16 59 56.60	21.173	24 07 56.2	56.05	09	18 44 34.79	22.258	26 21 45.3	01.90
10	17 02 03.73	21.204	24 13 29.2	54.95	10	18 46 48.37	22.268	26 21 30.0	03.19
11	17 04 11.05	21.235	24 18 55.6	53.85	11	18 49 02.01	22.278	26 21 07.0	04.48
12	17 06 18.55	21.266	24 24 15.4	52.75	12	18 51 15.71	22.288	26 20 36.2	05.78
13	17 08 26.24	21.297	24 29 28.6	51.63	13	18 53 29.47	22.298	26 19 57.6	07.08
14	17 10 34.11	21.328	24 34 35.0	50.52	14	18 55 43.28	22.305	26 19 11.3	08.37
15	17 12 42.17	21.358	24 39 34.8	49.40	15	18 57 57.13	22.313	26 18 17.2	09.67
16	17 14 50.40	21.388	24 44 27.8	48.27	16	19 00 11.03	22.321	26 17 15.3	10.98
17	17 16 58.82	21.417	24 49 14.0	47.13	17	19 02 24.98	22.328	26 16 05.5	12.28
18	17 19 07.40	21.445	24 53 53.3	45.98	18	19 04 38.96	22.333	26 14 48.0	13.58
19	17 21 16.16	21.475	24 58 25.8	44.85	19	19 06 52.98	22.338	26 13 22.6	14.88
20	17 23 25.10	21.504	25 02 51.5	43.70	20	19 09 07.02	22.343	26 11 49.5	16.18
21	17 25 34.21	21.532	25 07 10.2	42.53	21	19 11 21.10	22.348	26 10 08.5	17.49
22	17 27 43.48	21.559	25 11 21.9	41.38	22	19 13 35.20	22.352	26 08 19.6	18.80
23	17 29 52.92	21.588	25 15 26.7	40.22	23	19 15 49.32	22.355	26 06 22.9	20.10
24	17 32 02.53	21.615	S. 25 19 24.5	39.04	24	19 18 03.46	22.358	S. 26 04 18.4	21.41

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Sunday 21.					Tuesday 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	19 18 03.46	22.358	S. 26 04 18.4	21.41	00	21 04 46.17	21.959	S. 21 53 04.3	82.35
01	19 20 17.61	22.360	26 02 06.0	22.72	01	21 06 57.88	21.943	21 44 46.6	83.55
02	19 22 31.78	22.362	25 59 45.8	24.02	02	21 09 09.49	21.928	21 36 21.7	84.73
03	19 24 45.95	22.363	25 57 17.8	25.33	03	21 11 21.01	21.912	21 27 49.8	85.91
04	19 27 00.13	22.363	25 54 41.9	26.63	04	21 13 32.43	21.896	21 19 10.8	87.08
05	19 29 14.31	22.363	25 51 58.2	27.93	05	21 15 43.76	21.880	21 10 24.8	88.26
06	19 31 28.48	22.362	25 49 06.7	29.24	06	21 17 54.99	21.863	21 01 31.7	89.43
07	19 33 42.65	22.362	25 46 07.3	30.56	07	21 20 06.12	21.848	20 52 31.7	90.58
08	19 35 56.82	22.360	25 43 00.0	31.86	08	21 22 17.16	21.832	20 43 24.8	91.73
09	19 38 10.97	22.358	25 39 45.0	33.16	09	21 24 28.10	21.815	20 34 10.9	92.88
10	19 40 25.11	22.355	25 36 22.1	34.47	10	21 26 38.94	21.799	20 24 50.2	94.02
11	19 42 39.23	22.352	25 32 51.4	35.77	11	21 28 49.69	21.783	20 15 22.7	95.16
12	19 44 53.33	22.348	25 29 12.9	37.07	12	21 31 00.34	21.768	20 05 48.3	96.29
13	19 47 07.41	22.344	25 25 26.6	38.37	13	21 33 10.90	21.751	19 56 07.2	97.41
14	19 49 21.46	22.340	25 21 32.5	39.67	14	21 35 21.35	21.734	19 46 19.4	98.53
15	19 51 35.49	22.335	25 17 30.6	40.97	15	21 37 31.71	21.719	19 36 24.8	99.65
16	19 53 49.48	22.329	25 13 20.9	42.27	16	21 39 41.98	21.703	19 26 23.6	100.75
17	19 56 03.44	22.323	25 09 03.4	43.56	17	21 41 52.15	21.687	19 16 15.8	101.85
18	19 58 17.36	22.316	25 04 38.2	44.85	18	21 44 02.22	21.671	19 06 01.4	102.95
19	20 00 31.23	22.309	25 00 05.2	46.15	19	21 46 12.20	21.656	18 55 40.4	104.03
20	20 02 45.07	22.303	24 55 24.4	47.43	20	21 48 22.09	21.641	18 45 13.0	105.11
21	20 04 58.86	22.295	24 50 36.0	48.72	21	21 50 31.89	21.625	18 34 39.1	106.18
22	20 07 12.61	22.287	24 45 39.8	50.01	22	21 52 41.59	21.609	18 23 58.8	107.25
23	20 09 26.30	22.278	S. 24 40 35.9	51.29	23	21 54 51.20	21.594	S. 18 13 12.1	108.31
Monday 22.					Wednesday 24.				
00	20 11 39.94	22.268	S. 24 35 24.3	52.58	00	21 57 00.72	21.579	S. 18 02 19.1	109.36
01	20 13 53.52	22.259	24 30 05.0	53.85	01	21 59 10.15	21.564	17 51 19.8	110.41
02	20 16 07.05	22.250	24 24 38.1	55.13	02	22 01 19.49	21.549	17 40 14.2	111.45
03	20 18 20.52	22.239	24 19 03.5	56.40	03	22 03 28.74	21.535	17 29 02.4	112.48
04	20 20 33.92	22.228	24 13 21.3	57.67	04	22 05 37.91	21.521	17 17 44.4	113.51
05	20 22 47.26	22.218	24 07 31.5	58.94	05	22 07 46.99	21.507	17 06 20.3	114.53
06	20 25 00.54	22.208	24 01 34.0	60.21	06	22 09 55.99	21.493	16 54 50.1	115.53
07	20 27 13.75	22.195	23 55 29.0	61.46	07	22 12 04.91	21.479	16 43 13.9	116.53
08	20 29 26.88	22.183	23 49 16.5	62.72	08	22 14 13.74	21.466	16 31 31.8	117.52
09	20 31 39.95	22.172	23 42 56.4	63.98	09	22 16 22.50	21.453	16 19 43.7	118.51
10	20 33 52.94	22.158	23 36 28.7	65.24	10	22 18 31.18	21.440	16 07 49.7	119.49
11	20 36 05.85	22.146	23 29 53.5	66.48	11	22 20 39.78	21.428	15 55 49.8	120.46
12	20 38 18.69	22.133	23 23 10.9	67.73	12	22 22 48.31	21.416	15 43 44.2	121.42
13	20 40 31.45	22.120	23 16 20.8	68.97	13	22 24 56.77	21.403	15 31 32.8	122.38
14	20 42 44.13	22.106	23 09 23.3	70.20	14	22 27 05.15	21.392	15 19 15.7	123.32
15	20 44 56.72	22.092	23 02 18.4	71.44	15	22 29 13.47	21.380	15 06 53.0	124.25
16	20 47 09.23	22.078	22 55 06.0	72.68	16	22 31 21.71	21.369	14 54 24.7	125.18
17	20 49 21.66	22.064	22 47 46.3	73.89	17	22 33 29.90	21.359	14 41 50.8	126.10
18	20 51 34.00	22.049	22 40 19.3	75.12	18	22 35 38.02	21.348	14 29 11.5	127.01
19	20 53 46.25	22.035	22 32 44.9	76.33	19	22 37 46.08	21.339	14 16 26.7	127.92
20	20 55 58.42	22.020	22 25 03.3	77.54	20	22 39 54.09	21.329	14 03 36.5	128.81
21	20 58 10.49	22.005	22 17 14.4	78.76	21	22 42 02.03	21.320	13 50 41.0	129.69
22	21 00 22.48	21.990	22 09 18.2	79.97	22	22 44 09.93	21.312	13 37 40.2	130.57
23	21 02 34.37	21.974	22 01 14.8	81.16	23	22 46 17.77	21.303	13 24 34.2	131.43
24	21 04 46.17	21.959	S. 21 53 04.3	82.35	24	22 48 25.57	21.296	S. 13 11 23.0	132.29

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 25.					Saturday 27.				
	h m s		° ' "			h m s		° ' "	
00	22 48 25.57	21.296	S. 13 11 23.0	132.29	00	00 30 43.45	21.561	S. 1 18 07.9	160.18
01	22 50 33.32	21.288	12 58 06.7	133.13	01	00 32 52.88	21.583	1 02 06.0	160.43
02	22 52 41.03	21.281	12 44 45.4	133.98	02	00 35 02.44	21.604	0 46 02.7	160.68
03	22 54 48.69	21.274	12 31 19.0	134.81	03	00 37 12.13	21.627	0 29 57.9	160.90
04	22 56 56.32	21.268	12 17 47.7	135.63	04	00 39 21.96	21.651	S. 0 13 51.9	161.10
05	22 59 03.91	21.263	12 04 11.5	136.43	05	00 41 31.94	21.676	N. 0 02 15.3	161.29
06	23 01 11.47	21.258	11 50 30.5	137.23	06	00 43 42.07	21.700	0 18 23.6	161.47
07	23 03 19.00	21.253	11 36 44.8	138.02	07	00 45 52.34	21.726	0 34 32.9	161.63
08	23 05 26.51	21.248	11 22 54.3	138.80	08	00 48 02.78	21.753	0 50 43.1	161.78
09	23 07 33.98	21.244	11 08 59.2	139.57	09	00 50 13.37	21.779	1 06 54.2	161.90
10	23 09 41.44	21.242	10 54 59.5	140.33	10	00 52 24.13	21.808	1 23 05.9	162.00
11	23 11 48.88	21.239	10 40 55.3	141.07	11	00 54 35.07	21.837	1 39 18.2	162.09
12	23 13 56.31	21.238	10 26 46.7	141.80	12	00 56 46.17	21.865	1 55 31.0	162.17
13	23 16 03.73	21.235	10 12 33.7	142.53	13	00 58 57.45	21.896	2 11 44.2	162.23
14	23 18 11.13	21.233	9 58 16.3	143.25	14	01 01 08.92	21.927	2 27 57.7	162.27
15	23 20 18.53	21.233	9 43 54.7	143.95	15	01 03 20.57	21.958	2 44 11.4	162.29
16	23 22 25.93	21.233	9 29 28.9	144.64	16	01 05 32.41	21.990	3 00 25.2	162.30
17	23 24 33.33	21.234	9 14 59.0	145.33	17	01 07 44.45	22.023	3 16 39.0	162.28
18	23 26 40.74	21.235	8 00 25.0	145.99	18	01 09 56.69	22.057	3 32 52.6	162.25
19	23 28 48.15	21.237	8 45 47.1	146.65	19	01 12 09.13	22.091	3 49 06.0	162.11
20	23 30 55.58	21.239	8 31 05.2	147.30	20	01 14 21.78	22.126	4 05 19.1	162.14
21	23 33 03.02	21.242	8 16 19.5	147.93	21	01 16 34.64	22.162	4 21 31.7	162.05
22	23 35 10.48	21.245	8 01 30.0	148.56	22	01 18 47.72	22.198	4 37 43.7	161.95
23	23 37 17.96	21.249	S. 7 46 56.8	149.17	23	01 21 01.02	22.236	N. 4 53 55.1	161.83
Friday 26.					Sunday 28.				
	h m s		° ' "			h m s		° ' "	
00	23 39 25.47	21.254	S. 7 31 40.0	149.77	00	01 23 14.55	22.274	N. 5 10 05.7	161.69
01	23 41 33.01	21.259	7 16 39.6	150.35	01	01 25 28.31	22.313	5 26 15.4	161.53
02	23 43 40.58	21.264	7 01 35.8	150.93	02	01 27 42.30	22.351	5 42 24.1	161.36
03	23 45 48.18	21.271	6 46 28.5	151.49	03	01 29 56.52	22.391	5 58 31.7	161.16
04	23 47 55.83	21.278	6 31 17.9	152.04	04	01 32 10.99	22.433	6 14 38.0	160.94
05	23 50 03.52	21.287	6 16 04.0	152.58	05	01 34 25.71	22.474	6 30 43.0	160.72
06	23 52 11.27	21.295	6 00 46.9	153.10	06	01 36 40.68	22.516	6 46 46.6	160.47
07	23 54 19.06	21.303	5 45 26.8	153.61	07	01 38 55.90	22.558	7 02 48.6	160.18
08	23 56 26.91	21.313	5 30 03.6	154.12	08	01 41 11.38	22.602	7 18 48.8	159.89
09	23 58 34.82	21.324	5 14 37.4	154.60	09	01 43 27.12	22.646	7 34 47.3	159.58
10	00 00 42.80	21.335	4 59 08.4	155.07	10	01 45 43.13	22.690	7 50 43.8	159.25
11	00 02 50.84	21.346	4 43 36.6	155.53	11	01 47 59.40	22.735	8 06 38.3	158.90
12	00 04 58.95	21.358	4 28 02.1	155.97	12	01 50 15.95	22.781	8 22 30.6	158.53
13	00 07 07.14	21.372	4 12 25.0	156.40	13	01 52 32.77	22.828	8 38 20.6	158.13
14	00 09 15.41	21.385	3 56 45.3	156.82	14	01 54 49.88	22.875	8 54 08.2	157.73
15	00 11 23.76	21.400	3 41 03.2	157.22	15	01 57 07.27	22.922	9 09 53.3	157.29
16	00 13 32.21	21.416	3 25 18.7	157.61	16	01 59 24.94	22.970	9 25 35.7	156.84
17	00 15 40.75	21.431	3 09 31.9	157.98	17	02 01 42.91	23.019	9 41 15.4	156.38
18	00 17 49.38	21.448	2 53 42.9	158.33	18	02 04 01.17	23.068	9 56 52.2	155.88
19	00 19 58.12	21.465	2 37 51.9	158.68	19	02 06 19.73	23.119	10 12 25.9	155.36
20	00 22 06.96	21.483	2 21 58.8	159.02	20	02 08 38.60	23.169	10 27 56.5	154.83
21	00 24 15.91	21.501	2 06 03.7	159.33	21	02 10 57.76	23.219	10 43 23.9	154.28
22	00 26 24.97	21.520	1 50 06.8	159.63	22	02 13 17.23	23.271	10 58 47.8	153.70
23	00 28 34.15	21.540	1 34 08.2	159.91	23	02 15 37.01	23.323	11 14 08.3	153.11
24	00 30 43.45	21.561	S. 1 18 07.9	160.18	24	02 17 57.11	23.376	N. 11 29 25.1	152.48

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
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Monday 29.

	h	m	s	s	°	'	"	"
00	02	17	57.11	23.376	N. 11	29	25.1	152.48
01	02	20	17.52	23.428	11	44	38.1	151.85
02	02	22	38.25	23.483	11	59	47.3	151.19
03	02	24	59.31	23.537	12	14	52.4	150.51
04	02	27	20.69	23.590	12	29	53.4	149.82
05	02	29	42.39	23.644	12	44	50.2	149.10
06	02	32	04.42	23.700	12	59	42.6	148.35
07	02	34	26.79	23.756	13	14	30.4	147.58
08	02	36	49.49	23.811	13	29	13.6	146.80
09	02	39	12.52	23.867	13	43	52.0	146.00
10	02	41	35.89	23.923	13	58	25.6	145.18
11	02	43	59.60	23.981	14	12	54.1	144.32
12	02	46	23.66	24.038	14	27	17.4	143.45
13	02	48	48.05	24.094	14	41	35.5	142.57
14	02	51	12.79	24.153	14	55	48.2	141.65
15	02	53	37.88	24.210	15	09	55.3	140.72
16	02	56	03.31	24.268	15	23	56.8	139.77
17	02	58	29.09	24.326	15	37	52.5	138.79
18	03	00	55.22	24.384	15	51	42.3	137.79
19	03	03	21.70	24.443	16	05	26.0	136.78
20	03	05	48.53	24.501	16	19	03.6	135.74
21	03	08	15.71	24.559	16	32	34.9	134.68
22	03	10	43.24	24.618	16	45	59.8	133.61
23	03	13	11.12	24.676	N. 16	59	18.2	132.51

Tuesday 30.

	h	m	s	s	°	'	"	"
00	03	15	39.35	24.734	N. 17	12	29.9	131.39
01	03	18	07.93	24.793	17	25	34.9	130.25
02	03	20	36.87	24.852	17	38	32.9	129.08
03	03	23	06.15	24.910	17	51	23.9	127.91
04	03	25	35.79	24.968	18	04	07.8	126.71
05	03	28	05.77	25.026	18	16	44.4	125.48
06	03	30	36.10	25.084	18	29	13.6	124.24
07	03	33	06.78	25.142	18	41	35.3	122.98
08	03	35	37.80	25.198	18	53	49.4	121.71
09	03	38	09.16	25.255	19	05	55.8	120.41
10	03	40	40.86	25.313	19	17	54.3	119.08
11	03	43	12.91	25.369	19	29	44.8	117.74
12	03	45	45.29	25.425	19	41	27.2	116.39
13	03	48	18.01	25.481	19	53	01.5	115.02
14	03	50	51.06	25.536	20	04	27.4	113.62
15	03	53	24.44	25.591	20	15	44.9	112.20
16	03	55	58.15	25.645	20	26	53.8	110.77
17	03	58	32.18	25.698	20	37	54.1	109.33
18	04	01	06.53	25.752	20	48	45.7	107.86
19	04	03	41.20	25.804	20	59	28.4	106.38
20	04	06	16.18	25.856	21	10	02.2	104.88
21	04	08	51.47	25.908	21	20	26.9	103.36
22	04	11	27.07	25.958	21	30	42.5	101.83
23	04	14	02.96	26.008	21	40	48.8	100.27
24	04	16	39.16	26.058	N. 21	50	45.7	98.70

Wednesday 31.

	h	m	s	s	°	'	"	"
00	04	16	39.16	26.058	N. 21	50	45.7	98.70
01	04	19	15.65	26.105	22	00	33.2	97.12
02	04	21	52.42	26.153	22	10	11.1	95.51
03	04	24	29.48	26.199	22	19	39.3	93.90
04	04	27	06.81	26.244	22	28	57.9	92.28
05	04	29	44.41	26.289	22	38	06.6	90.62
06	04	32	22.28	26.333	22	47	05.3	88.96
07	04	35	00.41	26.376	22	55	54.1	87.30
08	04	37	38.79	26.418	23	04	32.9	85.62
09	04	40	17.42	26.458	23	13	01.5	83.91
10	04	42	56.29	26.498	23	21	19.8	82.19
11	04	45	35.39	26.536	23	29	27.8	80.47
12	04	48	14.72	26.573	23	37	25.4	78.73
13	04	50	54.27	26.609	23	45	12.5	76.98
14	04	53	34.03	26.644	23	52	49.1	75.22
15	04	56	14.00	26.678	24	00	15.1	73.44
16	04	58	54.17	26.710	24	07	30.4	71.66
17	05	01	34.52	26.741	24	14	35.0	69.87
18	05	04	15.06	26.771	24	21	28.8	68.06
19	05	06	55.77	26.799	24	28	11.7	66.25
20	05	09	36.65	26.826	24	34	43.8	64.43
21	05	12	17.68	26.851	24	41	04.9	62.59
22	05	14	58.86	26.876	24	47	14.9	60.75
23	05	17	40.19	26.898	N. 24	53	13.9	58.91

Thursday, NOV. 1.

	h	m	s	s	°	'	"	"
00	05	20	21.64	26.919	N. 24	59	01.8	57.06

PHASES OF THE MOON.

	h	m
Oct. 6	05	05.8
" 13	15	56.3
" 21	21	06.2
" 28	22	43.4

	h	m
Oct. 1	22	00
" 17	20	01
" 30	01	09

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semi- diameter passing the Meridian.*	Equation of Time, to be subtracted from Apparent Time.	Var. in 1 hour.
		Apparent Right Ascension	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.			
		h m s	s	° ' "	"	m s	m s	s
Thur.	1	14 25 41.98	9.791	S 14 26 34.8	48.07	1 06.88	16 21.23	0.065
Frid.	2	14 29 57.38	9.826	14 45 41.5	47.48	1 06.99	16 22.38	0.031
Sat.	3	14 33 53.61	9.860	15 04 33.8	46.88	1 07.11	16 22.71	0.004
Sun.	4	14 37 30.68	9.895	15 23 11.6	46.26	1 07.22	16 22.20	0.039
Mon.	5	14 41 28.59	9.931	15 41 34.2	45.63	1 07.34	16 20.85	0.074
Tues.	6	14 45 27.36	9.966	15 59 41.5	44.97	1 07.46	16 18.64	0.109
Wed.	7	14 49 26.97	10.002	16 17 32.8	44.30	1 07.58	16 15.59	0.145
Thur.	8	14 53 27.45	10.038	16 35 07.8	43.61	1 07.69	16 11.68	0.181
Frid.	9	14 57 28.78	10.073	16 52 26.2	42.91	1 07.81	16 06.92	0.216
Sat.	10	15 01 30.98	10.109	17 09 27.4	42.19	1 07.93	16 01.30	0.252
Sun.	11	15 05 34.03	10.145	17 26 11.0	41.44	1 08.05	15 54.82	0.288
Mon.	12	15 09 37.93	10.181	17 42 36.5	40.69	1 08.17	15 47.49	0.323
Tues.	13	15 13 42.69	10.216	17 58 43.7	39.91	1 08.29	15 39.31	0.358
Wed.	14	15 17 48.30	10.251	18 14 32.1	39.12	1 08.41	15 30.28	0.394
Thur.	15	15 21 54.75	10.286	18 30 01.3	38.31	1 08.53	15 20.42	0.429
Frid.	16	15 26 02.04	10.321	18 45 10.7	37.48	1 08.65	15 09.71	0.463
Sat.	17	15 30 10.16	10.355	19 00 00.2	36.64	1 08.76	14 58.18	0.498
Sun.	18	15 34 19.10	10.390	19 14 29.2	35.78	1 08.88	14 45.83	0.532
Mon.	19	15 38 28.86	10.423	19 28 37.4	34.90	1 08.99	14 32.67	0.565
Tues.	20	15 42 39.42	10.457	19 42 24.4	34.01	1 09.11	14 18.70	0.599
Wed.	21	15 46 50.77	10.490	19 55 49.9	33.11	1 09.22	14 03.94	0.631
Thur.	22	15 51 02.92	10.522	20 08 53.4	32.18	1 09.33	13 48.40	0.664
Frid.	23	15 55 15.83	10.554	20 21 34.6	31.25	1 09.44	13 32.09	0.696
Sat.	24	15 59 29.52	10.586	20 33 53.2	30.30	1 09.55	13 15.01	0.727
Sun.	25	16 03 43.95	10.617	20 45 48.9	29.34	1 09.65	12 57.18	0.758
Mon.	26	16 07 59.13	10.648	20 57 21.3	28.36	1 09.75	12 38.61	0.789
Tues.	27	16 12 15.05	10.678	21 08 30.2	27.37	1 09.85	12 19.30	0.819
Wed.	28	16 16 31.69	10.708	21 19 15.2	26.37	1 09.95	11 59.27	0.849
Thur.	29	16 20 49.04	10.738	21 29 36.0	25.36	1 10.05	11 38.54	0.879
Frid.	30	16 25 07.09	10.766	21 39 32.4	24.34	1 10.14	11 17.11	0.907
Sat.	31	16 29 25.82	10.794	S. 21 49 04.1	23.30	1 10.23	10 55.00	0.935

* Mean Time of the Semidiameter passing may be found by subtracting 0.19 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be subtracted from Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*		
		h m s	° ' "	' "	m	h m s
Thur.	1	14 25 44.65	S. 14 26 47.9	16 08.81	16 21.25	14 42 05.90
Frid.	2	14 29 40.06	14 45 54.4	16 09.05	16 22.39	14 46 02.46
Sat.	3	14 33 36.31	15 04 46.6	16 09.29	16 22.71	14 49 59.01
Sun.	4	14 37 33.38	15 23 24.2	16 09.53	16 22.19	14 53 55.57
Mon.	5	14 41 31.30	15 41 46.7	16 09.76	16 20.83	14 57 52.12
Tues.	6	14 45 30.06	15 59 53.7	16 10.00	16 18.62	15 01 48.68
Wed.	7	14 49 29.68	16 17 44.8	16 10.23	16 15.55	15 05 45.24
Thur.	8	14 53 30.16	16 35 19.6	16 10.46	16 11.63	15 09 41.79
Frid.	9	14 57 31.49	16 52 37.7	16 10.69	16 06.86	15 13 38.35
Sat.	10	15 01 33.68	17 09 38.6	16 10.92	16 01.23	15 17 34.90
Sun.	11	15 05 36.72	17 26 21.9	16 11.14	15 54.74	15 21 31.46
Mon.	12	15 09 40.61	17 42 47.3	16 11.36	15 47.40	15 25 28.02
Tues.	13	15 13 45.36	17 58 54.2	16 11.58	15 39.21	15 29 24.57
Wed.	14	15 17 50.95	18 14 42.2	16 11.80	15 30.18	15 33 21.13
Thur.	15	15 21 57.38	18 30 11.0	16 12.02	15 20.31	15 37 17.69
Frid.	16	15 26 04.65	18 45 20.2	16 12.24	15 09.60	15 41 14.24
Sat.	17	15 30 12.74	19 00 09.3	16 12.45	14 58.06	15 45 10.80
Sun.	18	15 34 21.65	19 14 38.0	16 12.66	14 45.70	15 49 07.36
Mon.	19	15 38 31.38	19 28 45.9	16 12.87	14 32.53	15 53 03.91
Tues.	20	15 42 41.91	19 42 32.5	16 13.07	14 18.56	15 57 00.47
Wed.	21	15 46 53.23	19 55 57.6	16 13.27	14 03.30	16 00 57.03
Thur.	22	15 51 05.34	20 09 00.8	16 13.47	13 48.25	16 04 53.59
Frid.	23	15 55 18.21	20 21 41.6	16 13.66	13 31.93	16 08 50.14
Sat.	24	15 59 31.85	20 33 59.9	16 13.85	13 14.85	16 12 46.70
Sun.	25	16 03 46.24	20 45 55.2	16 14.03	12 57.01	16 16 43.26
Mon.	26	16 08 01.38	20 57 27.3	16 14.21	12 38.44	16 20 39.82
Tues.	27	16 12 17.24	21 08 35.8	16 14.38	12 19.13	16 24 36.37
Wed.	28	16 16 33.83	21 19 20.4	16 14.55	11 59.10	16 28 32.93
Thur.	29	16 20 51.12	21 29 40.9	16 14.71	11 38.37	16 32 29.49
Frid.	30	16 25 09.11	21 39 37.0	16 14.87	11 16.94	16 36 26.05
Sat.	31	16 29 27.78	S. 21 49 08.3	16 15.02	10 54.83	16 40 22.60

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
	12h.	12h.			ob.	12h.	ob.	12h.
	° ' "	"		h m s	' "	' "	' "	' "
1	218 49 24.3	N. 0.58	9.9965685	21 16 22.70	16 29.88	16 25.22	60 33.01	60 15.92
2	219 49 28.6	0.70	.9964592	21 12 26.79	16 19.86	16 13.97	59 56.25	59 34.61
3	220 49 35.0	0.80	.9963512	21 08 30.88	16 07.70	16 01.22	59 11.61	58 47.80
4	221 49 43.6	0.87	.9962444	21 04 34.97	15 54.65	15 48.12	58 23.69	57 59.72
5	222 49 54.3	0.91	.9961387	21 00 39.06	15 41.72	15 35.55	57 36.26	57 13.59
6	223 50 07.1	0.92	.9960341	20 56 43.15	15 29.65	15 24.08	56 51.95	56 31.48
7	224 50 21.9	0.90	9.9959303	20 52 47.24	15 18.85	15 13.98	56 12.29	55 54.44
8	225 50 38.7	0.85	.9958274	20 48 51.33	15 09.49	15 05.37	55 37.94	55 22.80
9	226 50 57.5	0.77	.9957253	20 44 55.42	15 01.60	14 58.19	55 08.99	54 56.46
10	227 51 18.1	0.67	9.9956239	20 40 59.51	14 55.12	14 52.37	54 45.18	54 35.11
11	228 51 40.5	0.55	.9955234	20 37 03.60	14 49.95	14 47.84	54 26.21	54 18.48
12	229 52 04.7	0.43	.9954236	20 33 07.69	14 46.05	14 44.57	54 11.89	54 06.48
13	230 52 30.5	0.30	9.9953246	20 29 11.78	14 43.42	14 42.61	54 02.26	53 59.29
14	231 52 57.8	0.17	.9952265	20 25 15.87	14 42.16	14 42.09	53 57.63	53 57.37
15	232 53 26.7	N. 0.05	.9951293	20 21 19.96	14 42.43	14 43.20	53 58.60	54 01.44
16	233 53 57.1	S. 0.07	9.9950331	20 17 24.05	14 44.44	14 46.17	54 05.99	54 12.36
17	234 54 28.8	0.16	.9949380	20 13 28.13	14 48.43	14 51.25	54 20.65	54 30.99
18	235 55 01.8	0.23	.9948442	20 09 32.22	14 54.64	14 58.62	54 43.43	54 58.06
19	236 55 36.2	0.27	9.9947516	20 05 36.31	15 03.21	15 08.40	55 14.89	55 33.93
20	237 56 11.7	0.29	.9946604	20 01 40.40	15 14.17	15 20.50	55 55.11	56 18.34
21	238 56 48.4	0.28	.9945708	19 57 44.49	15 27.34	15 34.62	56 43.45	57 10.17
22	239 57 26.3	0.23	9.9944830	19 53 48.58	15 42.25	15 50.13	57 38.20	58 07.13
23	240 58 05.3	0.15	.9943971	19 49 52.67	15 58.12	16 06.06	58 36.45	59 05.57
24	241 58 45.4	S. 0.04	.9943133	19 45 56.76	16 13.76	16 21.04	59 33.84	60 00.55
25	242 59 26.7	N. 0.08	9.9942316	19 42 00.84	16 27.68	16 33.49	60 24.94	60 46.27
26	244 00 09.1	0.22	.9941523	19 38 04.93	16 38.28	16 41.88	61 03.85	61 17.06
27	245 00 52.8	0.36	.9940755	19 34 09.02	16 44.17	16 45.05	61 25.45	61 28.70
28	246 01 37.8	0.50	9.9940012	19 30 13.11	16 44.51	16 42.57	61 26.72	61 19.58
29	247 02 24.1	0.62	.9939293	19 26 17.20	16 39.30	16 34.84	61 07.60	60 51.22
30	248 03 11.7	0.73	.9938599	19 22 21.28	16 29.35	16 23.00	60 31.05	60 07.76
31	249 04 00.8	N. 0.81	9.9937929	19 18 25.37	16 16.01	16 08.57	59 42.09	59 14.77

MEAN TIME.

Day of the Month.	THE MOON'S						
	Longitude.		Latitude.		Age.	Meridian Passage.	
	oh.	12h.	oh.	12h.	oh.	Upper.	Lower.
	° ' "	° ' "	° ' "	° ' "	d	h m	h m
1	81 01 15.1	88 22 18.3	N. 1 50 33.1	N. 2 27 33.7	18.34	02 47.2	15 19.0
2	95 38 53.6	102 50 33.5	3 01 48.1	3 32 45.8	19.34	03 50.6	16 22.1
3	109 56 59.3	116 58 00.2	4 00 03.1	4 23 22.3	20.34	04 52.8	17 22.4
4	123 53 32.6	130 43 38.6	4 42 31.2	4 57 23.2	21.34	05 51.0	18 18.3
5	137 28 25.8	144 08 05.2	5 07 55.8	5 14 10.2	22.34	06 44.4	19 09.5
6	150 42 51.0	157 12 59.3	5 16 11.4	5 14 06.6	23.34	07 33.5	19 56.5
7	163 38 47.3	170 00 32.9	5 08 05.5	4 58 19.6	24.34	08 18.9	20 40.5
8	176 18 34.0	182 33 08.1	4 45 02.3	4 28 27.9	25.34	09 01.7	21 22.5
9	188 44 32.4	194 53 03.3	4 08 52.3	3 46 32.4	26.34	09 43.2	22 03.8
10	200 58 56.4	207 02 26.9	3 21 46.0	2 54 51.5	27.34	10 24.3	22 45.1
11	213 03 49.3	219 03 18.0	2 26 08.2	1 55 56.0	28.34	11 06.1	23 27.5
12	225 01 07.1	230 57 31.0	1 24 34.7	N. 0 52 24.5	29.34	11 49.2	* *
13	236 52 44.5	242 47 03.1	N. 0 19 45.8	S. 0 13 01.5	0.60	12 34.4	00 11.5
14	248 40 43.2	254 34 02.5	S. 0 45 37.6	1 17 43.0	1.60	13 21.6	00 57.8
15	260 27 20.0	266 20 56.4	1 48 59.0	2 19 07.0	2.60	14 10.9	01 46.1
16	272 15 13.9	278 10 36.5	2 47 49.4	3 14 49.0	3.60	15 01.4	02 36.1
17	284 07 30.0	290 06 21.7	3 39 49.0	4 02 33.6	4.60	15 52.4	03 26.9
18	296 07 40.7	302 11 57.1	4 22 47.1	4 40 14.2	5.60	16 42.8	04 17.7
19	308 19 42.2	314 31 27.5	4 54 40.3	5 05 50.8	6.60	17 32.1	05 07.7
20	320 47 44.7	327 09 04.7	5 13 32.2	5 17 31.2	7.60	18 20.2	05 56.3
21	333 35 56.3	340 08 46.4	5 17 35.8	5 13 35.0	8.60	19 07.3	06 43.8
22	346 47 57.4	353 33 47.1	5 05 20.2	4 52 45.2	9.60	19 54.2	07 30.7
23	0 26 27.0	7 26 00.8	4 35 47.4	4 14 28.6	10.60	20 42.1	08 18.0
24	14 32 23.3	21 45 19.2	3 48 55.9	3 19 22.7	11.60	21 32.1	09 06.8
25	29 04 23.0	36 28 57.9	2 46 09.6	2 09 44.4	12.60	22 25.6	09 58.4
26	43 58 16.5	51 31 21.7	1 30 42.5	S. 0 49 45.8	13.60	23 23.7	10 54.1
27	59 07 07.9	66 44 23.8	S. 0 07 41.7	N. 0 34 38.5	14.60	* *	11 54.3
28	74 21 54.3	81 58 24.0	N. 1 16 22.4	1 56 38.4	15.60	00 26.0	12 58.5
29	89 32 40.0	97 03 34.0	2 34 38.1	3 09 39.0	16.60	01 31.4	14 04.4
30	104 30 05.9	111 51 24.6	3 41 04.6	4 08 27.0	17.60	02 37.0	15 08.9
31	119 06 49.7	126 15 51.7	N. 4 31 26.1	N. 4 49 49.3	18.60	03 39.6	16 09.1

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
Thursday 1.					Saturday 3.				
	h m s		° ' "			h m s		° ' "	
00	05 20 21.64	26.919	N. 24 59 01.8	57.06	00	07 28 56.95	26.048	N. 25 55 22.8	32.30
01	05 23 03.22	26.939	25 04 38.6	55.19	01	07 31 33.08	25.993	25 52 03.9	34.00
02	05 25 44.91	26.957	25 10 04.1	53.32	02	07 34 08.87	25.938	25 48 34.8	35.69
03	05 28 26.70	26.973	25 15 18.4	51.44	03	07 36 44.33	25.882	25 44 55.6	37.37
04	05 31 08.59	26.989	25 20 21.4	49.56	04	07 39 19.45	25.824	25 41 06.4	39.03
05	05 33 50.57	27.002	25 25 13.1	47.67	05	07 41 54.22	25.765	25 37 07.2	40.68
06	05 36 32.62	27.013	25 29 53.4	45.78	06	07 44 28.63	25.705	25 32 58.2	42.33
07	05 39 14.73	27.024	25 34 22.4	43.89	07	07 47 02.68	25.645	25 28 39.3	43.95
08	05 41 56.91	27.033	25 38 40.1	41.99	08	07 49 36.37	25.583	25 24 10.8	45.56
09	05 44 39.13	27.039	25 42 46.3	40.08	09	07 52 09.68	25.521	25 19 32.6	47.17
10	05 47 21.38	27.045	25 46 41.1	38.18	10	07 54 42.62	25.458	25 14 44.8	48.76
11	05 50 03.67	27.049	25 50 24.5	36.27	11	07 57 15.17	25.393	25 09 47.5	50.33
12	05 52 45.97	27.051	25 53 56.3	34.35	12	07 59 47.33	25.328	25 04 40.9	51.88
13	05 55 28.28	27.052	25 57 16.7	32.44	13	08 02 19.10	25.262	24 59 25.0	53.43
14	05 58 10.59	27.051	26 00 25.6	30.53	14	08 04 50.47	25.195	24 53 59.8	54.95
15	06 00 52.89	27.048	26 03 23.0	28.61	15	08 07 21.44	25.128	24 48 25.6	56.47
16	06 03 35.16	27.043	26 06 08.9	26.70	16	08 09 52.01	25.061	24 42 42.2	57.98
17	06 06 17.40	27.037	26 08 43.4	24.78	17	08 12 22.17	24.992	24 36 49.9	59.45
18	06 08 59.60	27.028	26 11 06.3	22.86	18	08 14 51.91	24.923	24 30 48.8	60.92
19	06 11 41.74	27.018	26 13 17.7	20.95	19	08 17 21.24	24.853	24 24 38.9	62.38
20	06 14 23.82	27.007	26 15 17.7	19.04	20	08 19 50.14	24.783	24 18 20.3	63.83
21	06 17 05.83	26.994	26 17 06.2	17.13	21	08 22 18.63	24.713	24 11 53.0	65.25
22	06 19 47.75	26.979	26 18 43.3	15.23	22	08 24 46.69	24.641	24 05 17.3	66.65
23	06 22 29.58	26.963	N. 26 20 08.9	13.31	23	08 27 14.32	24.568	N. 23 58 33.2	68.05
Friday 2.					Sunday 4.				
	h m s		° ' "			h m s		° ' "	
00	06 25 11.31	26.945	N. 26 21 23.0	11.41	00	08 29 41.51	24.496	N. 23 51 40.7	69.43
01	06 27 52.92	26.925	26 22 25.8	09.51	01	08 32 08.27	24.424	23 44 40.0	70.79
02	06 30 34.41	26.904	26 23 17.1	07.61	02	08 34 34.60	24.351	23 37 31.2	72.14
03	06 33 15.77	26.882	26 23 57.1	05.73	03	08 37 00.48	24.278	23 30 14.3	73.47
04	06 35 56.99	26.857	26 24 25.8	03.84	04	08 39 25.93	24.204	23 22 49.5	74.78
05	06 38 38.05	26.829	26 24 43.2	01.96	05	08 41 50.93	24.130	23 15 16.9	76.09
06	06 41 18.94	26.802	26 24 49.3	00.08	06	08 44 15.49	24.057	23 07 36.4	77.38
07	06 43 59.67	26.773	26 24 44.2	01.78	07	08 46 39.61	23.983	22 59 48.3	78.64
08	06 46 40.22	26.742	26 24 27.9	03.64	08	08 49 03.28	23.908	22 51 52.7	79.90
09	06 49 20.57	26.708	26 24 00.5	05.50	09	08 51 26.51	23.834	22 43 49.5	81.15
10	06 52 00.72	26.675	26 23 21.9	07.36	10	08 53 49.29	23.759	22 35 38.9	82.37
11	06 54 40.67	26.639	26 22 32.2	09.20	11	08 56 11.62	23.684	22 27 21.1	83.58
12	06 57 20.39	26.602	26 21 31.5	11.03	12	08 58 33.50	23.609	22 18 56.0	84.77
13	06 59 59.89	26.563	26 20 19.8	12.86	13	09 00 54.93	23.535	22 10 23.9	85.94
14	07 02 39.15	26.523	26 18 57.2	14.67	14	09 03 15.92	23.460	22 01 44.7	87.11
15	07 05 18.17	26.482	26 17 23.8	16.48	15	09 05 36.45	23.384	21 52 58.6	88.25
16	07 07 56.93	26.438	26 15 39.5	18.28	16	09 07 56.53	23.310	21 44 05.7	89.38
17	07 10 35.43	26.394	26 13 44.4	20.07	17	09 10 16.17	23.237	21 35 06.0	90.50
18	07 13 13.66	26.349	26 11 38.7	21.84	18	09 12 35.37	23.162	21 25 59.7	91.60
19	07 15 51.62	26.302	26 09 22.3	23.62	19	09 14 54.11	23.087	21 16 46.8	92.68
20	07 18 29.29	26.253	26 06 55.3	25.38	20	09 17 12.41	23.013	21 07 27.5	93.75
21	07 21 06.66	26.204	26 04 17.8	27.13	21	09 19 30.27	22.939	20 58 01.8	94.80
22	07 23 43.74	26.153	26 01 29.8	28.86	22	09 21 47.68	22.865	20 48 29.9	95.84
23	07 26 20.50	26.101	25 58 31.5	30.58	23	09 24 04.65	22.791	20 38 51.7	96.87
24	07 28 56.95	26.048	N. 25 55 22.8	32.30	24	09 26 21.17	22.718	N. 20 29 07.5	97.87

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Monday 5.					Wednesday 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	09 26 21.17	22.718	N. 20 29 07.5	97.87	00	11 07 46.11	19.762	N. 11 10 08.7	130.05
01	09 28 37.26	22.644	20 19 17.3	98.87	01	11 09 44.54	19.716	10 57 07.3	130.42
02	09 30 52.90	22.571	20 09 21.1	99.84	02	11 11 42.70	19.671	10 44 03.7	130.78
03	09 33 08.11	22.499	19 59 19.2	100.80	03	11 13 40.59	19.626	10 30 58.0	131.13
04	09 35 22.89	22.428	19 49 11.5	101.75	04	11 15 38.21	19.583	10 17 50.2	131.47
05	09 37 37.24	22.355	19 38 58.2	102.68	05	11 17 35.58	19.540	10 04 40.4	131.79
06	09 39 51.15	22.283	19 28 39.3	103.60	06	11 19 32.69	19.498	9 51 28.7	132.11
07	09 42 04.64	22.213	19 18 15.0	104.50	07	11 21 29.55	19.456	9 38 15.1	132.43
08	09 44 17.70	22.142	19 07 45.3	105.39	08	11 23 26.16	19.415	9 24 59.6	132.73
09	09 46 30.34	22.071	18 57 10.3	106.27	09	11 25 22.53	19.376	9 11 42.4	133.01
10	09 48 42.55	22.000	18 46 30.1	107.13	10	11 27 18.67	19.337	8 58 23.5	133.29
11	09 50 54.34	21.931	18 35 44.8	107.98	11	11 29 14.57	19.298	8 45 02.9	133.56
12	09 53 05.72	21.863	18 24 54.4	108.81	12	11 31 10.24	19.260	8 31 40.8	133.81
13	09 55 16.69	21.793	18 13 59.1	109.62	13	11 33 05.69	19.223	8 18 17.2	134.06
14	09 57 27.24	21.724	18 02 59.0	110.42	14	11 35 00.91	19.187	8 04 52.1	134.30
15	09 59 37.38	21.657	17 51 54.1	111.21	15	11 36 55.93	19.152	7 51 25.6	134.53
16	10 01 47.12	21.590	17 40 44.5	111.98	16	11 38 50.73	19.116	7 37 57.7	134.75
17	10 03 56.46	21.523	17 29 30.3	112.75	17	11 40 45.32	19.083	7 24 28.6	134.96
18	10 06 05.40	21.458	17 18 11.5	113.50	18	11 42 39.72	19.049	7 10 58.2	135.17
19	10 08 13.95	21.392	17 06 48.3	114.23	19	11 44 33.91	19.016	6 57 26.6	135.36
20	10 10 22.10	21.326	16 55 20.8	114.95	20	11 46 27.91	18.985	6 43 53.9	135.53
21	10 12 29.86	21.262	16 43 48.9	115.66	21	11 48 21.73	18.954	6 30 20.2	135.70
22	10 14 37.24	21.198	16 32 12.9	116.35	22	11 50 15.36	18.923	6 16 45.5	135.87
23	10 16 44.24	21.134	N. 16 20 32.7	117.03	23	11 52 08.81	18.893	N. 6 03 09.8	136.03
Tuesday 6.					Thursday 8.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	10 18 50.85	21.071	N. 16 08 48.5	117.70	00	11 54 02.08	18.864	N. 5 49 33.2	136.17
01	10 20 57.09	21.009	15 57 00.3	118.35	01	11 55 55.18	18.837	5 35 55.8	136.31
02	10 23 02.96	20.948	15 45 08.3	118.99	02	11 57 48.12	18.809	5 22 17.5	136.43
03	10 25 08.46	20.887	15 33 12.4	119.63	03	11 59 40.89	18.783	5 08 38.6	136.54
04	10 27 13.60	20.827	15 21 12.8	120.24	04	12 01 33.51	18.757	4 54 59.0	136.66
05	10 29 18.38	20.768	15 09 09.5	120.85	05	12 03 25.97	18.731	4 41 18.7	136.76
06	10 31 22.81	20.708	14 57 02.6	121.44	06	12 05 18.28	18.706	4 27 37.9	136.84
07	10 33 26.88	20.649	14 44 52.2	122.02	07	12 07 10.44	18.683	4 13 56.6	136.93
08	10 35 30.60	20.592	14 32 38.4	122.58	08	12 09 02.47	18.660	4 00 14.8	137.00
09	10 37 33.98	20.535	14 20 21.2	123.13	09	12 10 54.36	18.638	3 46 32.6	137.07
10	10 39 37.02	20.478	14 08 00.8	123.68	10	12 12 46.12	18.615	3 32 50.0	137.13
11	10 41 39.72	20.423	13 55 37.1	124.21	11	12 14 37.74	18.594	3 19 07.1	137.18
12	10 43 42.09	20.368	13 43 10.3	124.73	12	12 16 29.25	18.575	3 05 23.9	137.22
13	10 45 44.13	20.313	13 30 40.4	125.23	13	12 18 20.64	18.555	2 51 40.5	137.24
14	10 47 45.85	20.260	13 18 07.5	125.73	14	12 20 11.91	18.536	2 37 57.0	137.27
15	10 49 47.25	20.207	13 05 31.7	126.21	15	12 22 03.07	18.518	2 24 13.3	137.28
16	10 51 48.33	20.154	12 52 53.0	126.68	16	12 23 54.12	18.500	2 10 29.6	137.28
17	10 53 49.10	20.103	12 40 11.6	127.13	17	12 25 45.07	18.484	1 56 45.9	137.28
18	10 55 49.56	20.051	12 27 27.4	127.59	18	12 27 35.93	18.468	1 43 02.3	137.27
19	10 57 49.71	20.001	12 14 40.5	128.03	19	12 29 26.69	18.453	1 29 18.7	137.25
20	10 59 49.57	19.953	12 01 51.1	128.45	20	12 31 17.36	18.438	1 15 35.3	137.22
21	11 01 49.14	19.903	11 48 59.1	128.87	21	12 33 07.94	18.424	1 01 52.1	137.18
22	11 03 48.41	19.855	11 36 04.7	129.27	22	12 34 58.45	18.411	0 48 09.1	137.14
23	11 05 47.40	19.808	11 23 07.9	129.67	23	12 36 48.87	18.398	0 34 26.4	137.09
24	11 07 46.11	19.762	N. 11 10 08.7	130.05	24	12 38 39.22	18.386	N. 0 20 44.0	137.03

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Friday 9.					Sunday 11.				
	h m s	s	° ' " "			h m s	s	° ' " "	
00	12 38 39.22	18.386	N. 0 20 44.0	137.03	00	14 06 46.10	18.560	S. 10 14 55.9	124.83
01	12 40 29.50	18.375	N. 0 07 02.1	136.96	01	14 08 37.51	18.558	10 27 23.6	124.39
02	12 42 19.72	18.364	S. 0 06 39.5	136.88	02	14 10 29.03	18.556	10 39 48.6	123.93
03	12 44 09.87	18.354	0 20 20.5	136.79	03	14 12 20.66	18.614	10 52 10.8	123.47
04	12 45 59.97	18.346	0 34 01.0	136.70	04	14 14 12.40	18.633	11 04 30.2	123.00
05	12 47 50.02	18.338	0 47 40.9	136.60	05	14 16 04.26	18.653	11 16 46.8	122.53
06	12 49 40.02	18.329	1 01 20.2	136.50	06	14 17 56.23	18.673	11 29 00.6	122.05
07	12 51 29.97	18.322	1 14 58.9	136.38	07	14 19 48.33	18.693	11 41 11.4	121.55
08	12 53 19.88	18.316	1 28 36.8	136.25	08	14 21 40.55	18.714	11 53 19.2	121.05
09	12 55 09.76	18.310	1 42 13.9	136.12	09	14 23 32.90	18.736	12 05 24.0	120.55
10	12 56 59.60	18.304	1 55 50.2	135.98	10	14 25 25.38	18.758	12 17 25.8	120.03
11	12 58 49.41	18.300	2 09 25.6	135.83	11	14 27 17.99	18.780	12 29 24.4	119.51
12	13 00 39.20	18.297	2 23 00.1	135.67	12	14 29 10.74	18.803	12 41 19.9	118.98
13	13 02 28.97	18.293	2 36 33.6	135.51	13	14 31 03.62	18.826	12 53 12.2	118.44
14	13 04 18.71	18.290	2 50 06.2	135.33	14	14 32 56.65	18.850	13 05 01.2	117.89
15	13 06 08.45	18.289	3 03 37.6	135.15	15	14 34 49.82	18.873	13 16 46.9	117.34
16	13 07 58.18	18.288	3 17 08.0	134.97	16	14 36 43.13	18.898	13 28 29.3	116.78
17	13 09 47.90	18.286	3 30 37.2	134.77	17	14 38 36.60	18.923	13 40 08.2	116.20
18	13 11 37.61	18.286	3 44 05.2	134.57	18	14 40 30.21	18.948	13 51 43.7	115.63
19	13 13 27.33	18.288	3 57 32.0	134.36	19	14 42 23.98	18.974	14 03 15.7	115.04
20	13 15 17.06	18.288	4 10 57.5	134.13	20	14 44 17.90	19.000	14 14 44.2	114.45
21	13 17 06.79	18.290	4 24 21.6	133.91	21	14 46 11.98	19.027	14 26 09.1	113.85
22	13 18 56.54	18.293	4 37 44.4	133.68	22	14 48 06.22	19.053	14 37 30.4	113.23
23	13 20 46.31	18.296	S. 4 51 05.7	133.43	23	14 50 00.62	19.080	S. 14 48 47.9	112.62
Saturday 10.					Monday 12.				
00	13 22 36.09	18.299	S. 5 04 25.5	133.18	00	14 51 55.18	19.108	S. 15 00 01.8	112.00
01	13 24 25.90	18.303	5 17 43.8	132.92	01	14 53 49.91	19.136	15 11 11.9	111.36
02	13 26 15.73	18.308	5 31 00.5	132.65	02	14 55 44.81	19.164	15 22 18.1	110.72
03	13 28 05.60	18.314	5 44 15.6	132.38	03	14 57 39.88	19.193	15 33 20.5	110.08
04	13 29 55.50	18.320	5 57 29.1	132.10	04	14 59 35.12	19.222	15 44 19.0	109.41
05	13 31 45.44	18.327	6 10 40.8	131.80	05	15 01 30.54	19.251	15 55 13.4	108.74
06	13 33 35.42	18.334	6 23 50.7	131.51	06	15 03 26.13	19.281	16 06 03.9	108.08
07	13 35 25.45	18.342	6 36 58.9	131.21	07	15 05 21.91	19.311	16 16 50.3	107.39
08	13 37 15.52	18.350	6 50 05.2	130.89	08	15 07 17.86	19.340	16 27 32.6	106.71
09	13 39 05.65	18.359	7 03 09.6	130.57	09	15 09 13.99	19.371	16 38 10.8	106.01
10	13 40 55.83	18.369	7 16 12.0	130.24	10	15 11 10.31	19.402	16 48 44.7	105.30
11	13 42 46.08	18.379	7 29 12.5	129.91	11	15 13 06.81	19.433	16 59 14.4	104.59
12	13 44 36.38	18.389	7 42 10.9	129.56	12	15 15 03.50	19.464	17 09 39.8	103.88
13	13 46 26.75	18.401	7 55 07.2	129.21	13	15 17 00.38	19.496	17 20 00.9	103.14
14	13 48 17.19	18.413	8 08 01.4	128.86	14	15 18 57.45	19.528	17 30 17.5	102.41
15	13 50 07.70	18.425	8 20 53.5	128.49	15	15 20 54.71	19.559	17 40 29.8	101.67
16	13 51 58.29	18.438	8 33 43.3	128.11	16	15 22 52.16	19.592	17 50 37.5	100.91
17	13 53 48.95	18.451	8 46 30.8	127.73	17	15 24 49.81	19.624	18 00 40.7	100.15
18	13 55 39.70	18.466	8 59 16.0	127.33	18	15 26 47.65	19.657	18 10 39.3	99.38
19	13 57 30.54	18.480	9 11 58.8	126.93	19	15 28 45.69	19.689	18 20 33.3	98.61
20	13 59 21.46	18.494	9 24 39.2	126.53	20	15 30 43.92	19.723	18 30 22.6	97.83
21	14 01 12.47	18.510	9 37 17.2	126.13	21	15 32 42.36	19.757	18 40 07.2	97.03
22	14 03 03.58	18.527	9 49 52.7	125.70	22	15 34 41.00	19.789	18 49 47.0	96.23
23	14 04 54.79	18.543	10 02 25.6	125.27	23	15 36 39.83	19.823	18 59 22.0	95.43
24	14 06 46.10	18.560	S. 10 14 55.9	124.83	24	15 38 38.87	19.857	S. 19 08 52.2	94.62

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Tuesday 13.					Thursday 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	15 38 38.87	19.857	S. 19 08 52.2	94.62	00	17 17 52.95	21.443	S. 24 55 04.1	46.98
01	15 40 38.11	19.891	19 18 17.4	93.79	01	17 20 01.69	21.470	24 59 42.5	45.83
02	15 42 37.56	19.926	19 27 37.7	92.97	02	17 22 10.59	21.497	25 04 14.0	44.67
03	15 44 37.22	19.959	19 36 53.0	92.13	03	17 24 19.65	21.524	25 08 38.5	43.50
04	15 46 37.07	19.993	19 46 03.2	91.28	04	17 26 28.88	21.551	25 12 56.0	42.33
05	15 48 37.14	20.028	19 55 08.4	90.43	05	17 28 38.26	21.576	25 17 06.5	41.17
06	15 50 37.41	20.062	20 04 08.4	89.57	06	17 30 47.79	21.602	25 21 10.0	39.99
07	15 52 37.88	20.097	20 13 03.2	88.70	07	17 32 57.48	21.627	25 25 06.4	38.81
08	15 54 38.57	20.132	20 21 52.8	87.83	08	17 35 07.31	21.651	25 28 55.7	37.63
09	15 56 39.46	20.166	20 30 37.1	86.93	09	17 37 17.29	21.675	25 32 37.9	36.43
10	15 58 40.56	20.201	20 39 16.0	86.04	10	17 39 27.41	21.698	25 36 12.9	35.24
11	16 00 41.87	20.236	20 47 49.6	85.15	11	17 41 37.67	21.722	25 39 40.8	34.04
12	16 02 43.39	20.271	20 56 17.8	84.24	12	17 43 48.07	21.744	25 43 01.4	32.83
13	16 04 45.12	20.305	21 04 40.5	83.33	13	17 45 58.60	21.766	25 46 14.8	31.63
14	16 06 47.05	20.340	21 12 57.8	82.41	14	17 48 09.26	21.788	25 49 20.9	30.42
15	16 08 49.20	20.375	21 21 09.4	81.48	15	17 50 20.05	21.808	25 52 19.8	29.20
16	16 10 51.55	20.409	21 29 15.5	80.54	16	17 52 30.96	21.829	25 55 11.3	27.98
17	16 12 54.11	20.444	21 37 15.9	79.60	17	17 54 42.00	21.849	25 57 55.5	26.75
18	16 14 56.88	20.479	21 45 10.7	78.65	18	17 56 53.15	21.868	26 00 32.3	25.53
19	16 16 59.86	20.514	21 52 59.7	77.69	19	17 59 04.42	21.887	26 03 01.8	24.30
20	16 19 03.05	20.548	22 00 43.0	76.73	20	18 01 15.79	21.905	26 05 23.9	23.06
21	16 21 06.44	20.583	22 08 20.5	75.75	21	18 03 27.28	21.923	26 07 38.5	21.82
22	16 23 10.04	20.618	22 15 52.0	74.77	22	18 05 38.86	21.939	26 09 45.7	20.58
23	16 25 13.85	20.652	S. 22 23 17.7	73.79	23	18 07 50.55	21.956	S. 26 11 45.5	19.34
Wednesday 14.					Friday 16.				
00	16 27 17.86	20.686	S. 22 30 37.5	72.80	00	18 10 02.33	21.972	S. 26 13 37.8	18.09
01	16 29 22.08	20.720	22 37 51.3	71.79	01	18 12 14.21	21.987	26 15 22.6	16.84
02	16 31 26.50	20.753	22 44 59.0	70.78	02	18 14 26.17	22.001	26 16 59.9	15.58
03	16 33 31.12	20.788	22 52 00.6	69.77	03	18 16 38.22	22.016	26 18 29.6	14.33
04	16 35 35.95	20.822	22 58 56.2	68.75	04	18 18 50.36	22.029	26 19 51.8	13.08
05	16 37 40.98	20.855	23 05 45.6	67.72	05	18 21 02.57	22.042	26 21 06.5	11.82
06	16 39 46.21	20.888	23 12 28.8	66.68	06	18 23 14.86	22.054	26 22 13.6	10.56
07	16 41 51.64	20.921	23 19 05.8	65.64	07	18 25 27.22	22.066	26 23 13.2	09.29
08	16 43 57.26	20.953	23 25 36.5	64.59	08	18 27 39.65	22.077	26 24 05.1	08.02
09	16 46 03.08	20.987	23 32 00.9	63.54	09	18 29 52.14	22.087	26 24 49.4	06.75
10	16 48 09.10	21.020	23 38 19.0	62.48	10	18 32 04.69	22.096	26 25 26.1	05.48
11	16 50 15.32	21.052	23 44 30.7	61.41	11	18 34 17.29	22.105	26 25 55.2	04.21
12	16 52 21.72	21.083	23 50 35.9	60.33	12	18 36 29.95	22.114	26 26 16.6	02.93
13	16 54 28.32	21.115	23 56 34.7	59.26	13	18 38 42.66	22.122	26 26 30.4	01.66
14	16 56 35.10	21.146	24 02 27.0	58.17	14	18 40 55.41	22.129	26 26 36.5	00.38
15	16 58 42.07	21.178	24 08 12.7	57.08	15	18 43 08.21	22.136	26 26 34.9	00.90
16	17 00 49.23	21.208	24 13 51.9	55.98	16	18 45 21.04	22.141	26 26 25.7	02.18
17	17 02 56.57	21.239	24 19 24.4	54.87	17	18 47 33.90	22.147	26 26 08.8	03.46
18	17 05 04.10	21.269	24 24 50.3	53.76	18	18 49 46.80	22.152	26 25 44.2	04.74
19	17 07 11.80	21.298	24 30 09.5	52.64	19	18 51 59.72	22.155	26 25 11.9	06.02
20	17 09 19.68	21.328	24 35 22.0	51.52	20	18 54 12.66	22.158	26 24 32.0	07.30
21	17 11 27.74	21.358	24 40 27.7	50.39	21	18 56 25.62	22.162	26 23 44.3	08.58
22	17 13 35.97	21.387	24 45 26.7	49.26	22	18 58 38.60	22.164	26 22 49.0	09.87
23	17 15 44.38	21.415	24 50 18.8	48.12	23	19 00 51.59	22.165	26 21 45.9	11.15
24	17 17 52.95	21.443	S. 24 55 04.1	46.98	24	19 03 04.58	22.166	S. 26 20 35.2	12.43

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension	Var. in rom.	Declination.	Var. in rom.
Saturday 17.					Monday 19.				
	h m s		° ' "	"		h m s		° ' "	"
00	19 03 04.58	22.166	S. 26 20 35.2	12.43	00	20 48 32.66	21.612	S. 22 55 39.9	71.93
01	19 05 17.58	22.166	26 19 16.8	13.72	01	20 50 42.27	21.592	22 48 24.9	73.08
02	19 07 30.58	22.166	26 17 50.6	15.00	02	20 52 51.76	21.572	22 41 02.9	74.24
03	19 09 43.57	22.164	26 16 16.8	16.28	03	20 55 01.13	21.552	22 33 34.0	75.38
04	19 11 56.55	22.163	26 14 35.3	17.57	04	20 57 10.38	21.531	22 25 58.3	76.53
05	19 14 09.53	22.162	26 12 46.0	18.85	05	20 59 19.50	21.510	22 18 15.7	77.66
06	19 16 22.49	22.158	26 10 49.1	20.13	06	21 01 28.50	21.490	22 10 26.4	78.79
07	19 18 35.43	22.155	26 08 44.5	21.41	07	21 03 37.38	21.470	22 02 30.2	79.92
08	19 20 48.35	22.152	26 06 32.2	22.69	08	21 05 46.14	21.449	21 54 27.4	81.03
09	19 23 01.25	22.148	26 04 12.2	23.97	09	21 07 54.77	21.428	21 46 17.8	82.15
10	19 25 14.12	22.142	26 01 44.6	25.24	10	21 10 03.28	21.408	21 38 01.6	83.26
11	19 27 26.95	22.136	25 59 09.3	26.52	11	21 12 11.66	21.386	21 29 38.7	84.37
12	19 29 39.75	22.130	25 56 26.4	27.79	12	21 14 19.91	21.365	21 21 09.2	85.47
13	19 31 52.51	22.123	25 53 35.8	29.07	13	21 16 28.04	21.345	21 12 33.1	86.56
14	19 34 05.23	22.116	25 50 37.6	30.34	14	21 18 36.05	21.324	21 03 50.5	87.64
15	19 36 17.90	22.108	25 47 31.7	31.61	15	21 20 43.93	21.303	20 55 01.4	88.73
16	19 38 30.52	22.100	25 44 18.3	32.88	16	21 22 51.69	21.283	20 46 05.8	89.80
17	19 40 43.10	22.091	25 40 57.2	34.15	17	21 24 59.32	21.262	20 37 03.8	90.88
18	19 42 55.61	22.081	25 37 28.5	35.41	18	21 27 06.83	21.241	20 27 55.3	91.94
19	19 45 08.07	22.072	25 33 52.3	36.67	19	21 29 14.21	21.221	20 18 40.5	92.99
20	19 47 20.47	22.062	25 30 08.5	37.93	20	21 31 21.48	21.201	20 09 19.4	94.05
21	19 49 32.81	22.050	25 26 17.1	39.19	21	21 33 28.62	21.180	19 59 51.9	95.10
22	19 51 45.07	22.038	25 22 18.2	40.44	22	21 35 35.64	21.159	19 50 18.2	96.13
23	19 53 57.27	22.028	S. 25 18 11.8	41.70	23	21 37 42.53	21.139	S. 19 40 38.3	97.17
Sunday 18.					Tuesday 20.				
	h m s		° ' "	"		h m s		° ' "	"
00	19 56 09.40	22.015	S. 25 13 57.8	42.95	00	21 39 49.31	21.120	S. 19 30 52.2	98.20
01	19 58 21.45	22.002	25 09 36.4	44.20	01	21 41 55.97	21.100	19 20 59.9	99.23
02	20 00 33.42	21.988	25 05 07.4	45.45	02	21 44 02.51	21.080	19 11 01.5	100.24
03	20 02 45.31	21.975	25 00 31.0	46.68	03	21 46 08.93	21.061	19 00 57.0	101.25
04	20 04 57.12	21.962	24 55 47.2	47.93	04	21 48 15.24	21.042	18 50 46.5	102.25
05	20 07 08.85	21.947	24 50 55.9	49.16	05	21 50 21.43	21.023	18 40 30.0	103.25
06	20 09 20.48	21.932	24 45 57.3	50.39	06	21 52 27.51	21.004	18 30 07.5	104.24
07	20 11 32.03	21.918	24 40 51.2	51.63	07	21 54 33.48	20.986	18 19 39.1	105.23
08	20 13 43.49	21.902	24 35 37.8	52.84	08	21 56 39.34	20.967	18 09 04.8	106.20
09	20 15 54.85	21.885	24 30 17.1	54.07	09	21 58 45.08	20.948	17 58 24.7	107.17
10	20 18 06.11	21.869	24 24 49.0	55.29	10	22 00 50.72	20.932	17 47 38.8	108.13
11	20 20 17.28	21.853	24 19 13.6	56.51	11	22 02 56.26	20.914	17 36 47.1	109.10
12	20 22 28.34	21.835	24 13 30.9	57.72	12	22 05 01.69	20.897	17 25 49.6	110.05
13	20 24 39.30	21.818	24 07 41.0	58.93	13	22 07 07.02	20.879	17 14 46.5	110.99
14	20 26 50.16	21.802	24 01 43.8	60.13	14	22 09 12.24	20.863	17 03 37.7	111.93
15	20 29 00.92	21.783	23 55 39.4	61.33	15	22 11 17.37	20.847	16 52 23.4	112.86
16	20 31 11.56	21.765	23 49 27.9	62.52	16	22 13 22.40	20.830	16 41 03.4	113.78
17	20 33 22.10	21.747	23 43 09.2	63.72	17	22 15 27.33	20.814	16 29 38.0	114.70
18	20 35 32.52	21.728	23 36 43.3	64.90	18	22 17 32.17	20.799	16 18 07.0	115.62
19	20 37 42.83	21.709	23 30 10.4	66.08	19	22 19 36.92	20.784	16 06 30.6	116.51
20	20 39 53.03	21.690	23 23 30.3	67.27	20	22 21 41.58	20.770	15 54 48.9	117.41
21	20 42 03.11	21.671	23 16 43.2	68.43	21	22 23 46.16	20.756	15 43 01.7	118.30
22	20 44 13.08	21.652	23 09 49.1	69.60	22	22 25 50.65	20.743	15 31 09.3	119.18
23	20 46 22.93	21.632	23 02 48.0	70.77	23	22 27 55.07	20.729	15 19 11.6	120.05
24	20 48 32.66	21.612	S. 22 55 39.9	71.93	24	22 29 59.40	20.716	S. 15 07 08.7	120.92

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Wednesday 21.					Friday 23.				
h m s					h m s				
00	22 29 59.40	20.716	S. 15 07 08.7	120.92	00	00 08 56.75	20.758	S. 4 02 27.1	152.52
01	22 32 03.66	20.703	14 55 00.6	121.78	01	00 11 01.35	20.776	3 47 10.7	152.93
02	22 34 07.84	20.691	14 42 47.4	122.63	02	00 13 06.06	20.794	3 31 51.9	153.33
03	22 36 11.95	20.680	14 30 29.0	123.48	03	00 15 10.88	20.813	3 16 30.7	153.73
04	22 38 16.00	20.668	14 18 05.7	124.31	04	00 17 15.81	20.833	3 01 07.2	154.11
05	22 40 19.97	20.658	14 05 37.3	125.14	05	00 19 20.87	20.853	2 45 41.4	154.48
06	22 42 23.89	20.648	13 53 04.0	125.96	06	00 21 26.05	20.875	2 30 13.5	154.83
07	22 44 27.75	20.638	13 40 25.8	126.78	07	00 23 31.37	20.898	2 14 43.5	155.18
08	22 46 31.55	20.628	13 27 42.7	127.58	08	00 25 36.83	20.921	1 59 11.4	155.51
09	22 48 35.29	20.619	13 14 54.8	128.38	09	00 27 42.42	20.944	1 43 37.4	155.82
10	22 50 38.98	20.612	13 02 02.2	129.17	10	00 29 48.16	20.970	1 28 01.6	156.13
11	22 52 42.63	20.604	12 49 04.8	129.95	11	00 31 54.06	20.996	1 12 23.9	156.42
12	22 54 46.23	20.597	12 36 02.8	130.72	12	00 34 00.11	21.022	0 56 44.6	156.69
13	22 56 49.79	20.590	12 22 56.2	131.48	13	00 36 06.32	21.049	0 41 03.6	156.96
14	22 58 53.31	20.584	12 09 45.0	132.25	14	00 38 12.70	21.078	0 25 21.1	157.21
15	23 00 56.80	20.578	11 56 29.2	133.00	15	00 40 19.25	21.107	S. 0 09 37.1	157.45
16	23 03 00.25	20.573	11 43 09.0	133.73	16	00 42 25.98	21.136	N. 0 06 08.3	157.68
17	23 05 03.68	20.569	11 29 44.4	134.47	17	00 44 32.88	21.167	0 21 55.0	157.88
18	23 07 07.08	20.565	11 16 15.4	135.19	18	00 46 39.98	21.198	0 37 42.9	158.08
19	23 09 10.46	20.563	11 02 42.1	135.91	19	00 48 47.26	21.230	0 53 31.9	158.26
20	23 11 13.83	20.560	10 49 04.5	136.62	20	00 50 54.74	21.263	1 09 22.0	158.43
21	23 13 17.18	20.558	10 35 22.7	137.31	21	00 53 02.42	21.297	1 25 13.1	158.58
22	23 15 20.52	20.556	10 21 36.8	138.00	22	00 55 10.30	21.332	1 41 05.0	158.72
23	23 17 23.85	20.555	S. 10 07 46.7	138.68	23	00 57 18.40	21.368	N. 1 56 57.7	158.84
Thursday 22.					Saturday 24.				
h m s					h m s				
00	23 19 27.18	20.555	S. 9 53 52.6	139.35	00	00 59 26.71	21.403	N. 2 12 51.1	158.95
01	23 21 30.51	20.556	9 39 54.5	140.01	01	01 01 35.24	21.441	2 28 45.1	159.04
02	23 23 33.85	20.557	9 25 52.5	140.67	02	01 03 44.00	21.479	2 44 39.6	159.12
03	23 25 37.19	20.558	9 11 46.5	141.31	03	01 05 52.99	21.518	3 00 34.5	159.18
04	23 27 40.55	20.561	8 57 36.8	141.94	04	01 08 02.22	21.558	3 16 29.8	159.23
05	23 29 43.92	20.564	8 43 23.2	142.57	05	01 10 11.69	21.599	3 32 25.3	159.27
06	23 31 47.32	20.568	8 29 05.9	143.18	06	01 12 21.41	21.640	3 48 21.0	159.28
07	23 33 50.73	20.572	8 14 45.0	143.78	07	01 14 31.37	21.683	4 04 16.6	159.28
08	23 35 54.18	20.578	8 00 20.5	144.38	08	01 16 41.60	21.726	4 20 12.7	159.26
09	23 37 57.66	20.583	7 45 52.4	144.98	09	01 18 52.08	21.769	4 36 07.7	159.22
10	23 40 01.18	20.590	7 31 20.8	145.55	10	01 21 02.83	21.814	4 52 02.9	159.18
11	23 42 04.74	20.598	7 16 45.8	146.12	11	01 23 13.85	21.860	5 07 57.8	159.11
12	23 44 08.35	20.605	7 02 07.4	146.68	12	01 25 25.15	21.907	5 23 52.2	159.02
13	23 46 12.00	20.613	6 47 25.7	147.22	13	01 27 36.73	21.953	5 39 46.0	158.92
14	23 48 15.71	20.623	6 32 40.8	147.75	14	01 29 48.59	22.002	5 55 39.2	158.80
15	23 50 19.48	20.633	6 17 52.7	148.28	15	01 32 00.75	22.051	6 11 31.6	158.67
16	23 52 23.31	20.644	6 03 01.5	148.79	16	01 34 13.20	22.100	6 27 23.2	158.51
17	23 54 27.21	20.656	5 48 07.2	149.30	17	01 36 25.95	22.151	6 43 13.7	158.33
18	23 56 31.18	20.668	5 33 09.9	149.79	18	01 38 39.01	22.202	6 59 03.2	158.14
19	23 58 35.22	20.681	5 18 09.7	150.27	19	01 40 52.37	22.253	7 14 51.4	157.93
20	00 00 39.35	20.695	5 03 06.7	150.74	20	01 43 06.05	22.307	7 30 38.4	157.71
21	00 02 43.56	20.709	4 48 00.8	151.21	21	01 45 20.05	22.360	7 46 23.9	157.46
22	00 04 47.86	20.725	4 32 52.2	151.66	22	01 47 34.37	22.415	8 02 07.9	157.19
23	00 06 52.26	20.741	4 17 40.9	152.09	23	01 49 49.03	22.470	8 17 50.2	156.91
24	00 08 56.75	20.758	S. 4 02 27.1	152.52	24	01 52 04.01	22.525	N. 8 33 30.8	156.61

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Sunday 25.					Tuesday 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	01 52 04.01	22.525	N. 8 33 30.8	156.61	00	03 47 43.23	25.788	N. 19 50 41.5	117.09
01	01 54 19.33	22.582	8 49 09.5	156.28	01	03 50 18.17	25.859	20 02 20.0	115.72
02	01 56 34.99	22.639	9 04 46.2	155.95	02	03 52 53.54	25.929	20 13 50.1	114.33
03	01 58 51.00	22.698	9 20 20.9	155.59	03	03 55 29.32	25.998	20 25 11.9	112.92
04	02 01 07.36	22.757	9 35 53.3	155.20	04	03 58 05.52	26.068	20 36 25.1	111.48
05	02 03 24.08	22.816	9 51 23.3	154.80	05	04 00 42.13	26.136	20 47 29.7	110.03
06	02 05 41.15	22.876	10 06 50.9	154.38	06	04 03 19.15	26.203	20 58 25.5	108.56
07	02 07 58.59	22.937	10 22 15.9	153.94	07	04 05 56.57	26.270	21 09 12.4	107.06
08	02 10 16.39	22.998	10 37 38.2	153.48	08	04 08 34.39	26.337	21 19 50.2	105.54
09	02 12 34.57	23.061	10 52 57.6	152.99	09	04 11 12.61	26.403	21 30 18.9	104.01
10	02 14 53.12	23.123	11 08 14.1	152.49	10	04 13 51.22	26.467	21 40 38.3	102.45
11	02 17 12.05	23.187	11 23 27.5	151.97	11	04 16 30.21	26.531	21 50 48.3	100.88
12	02 19 31.36	23.251	11 38 37.7	151.43	12	04 19 09.59	26.594	22 00 48.8	99.28
13	02 21 51.06	23.315	11 53 44.6	150.86	13	04 21 49.34	26.657	22 10 39.6	97.66
14	02 24 11.14	23.381	12 08 48.0	150.27	14	04 24 29.47	26.718	22 20 20.7	96.03
15	02 26 31.63	23.448	12 23 47.8	149.67	15	04 27 09.96	26.778	22 29 51.9	94.37
16	02 28 52.51	23.513	12 38 44.0	149.03	16	04 29 50.81	26.838	22 39 13.1	92.69
17	02 31 13.78	23.579	12 53 36.2	148.38	17	04 32 32.02	26.896	22 48 24.2	91.00
18	02 33 35.46	23.648	13 08 24.5	147.71	18	04 35 13.56	26.953	22 57 25.1	89.29
19	02 35 57.55	23.716	13 23 08.7	147.02	19	04 37 55.45	27.009	23 06 15.7	87.58
20	02 38 20.05	23.783	13 37 48.7	146.30	20	04 40 37.67	27.063	23 14 56.0	85.83
21	02 40 42.95	23.852	13 52 24.3	145.55	21	04 43 20.21	27.117	23 23 25.7	84.07
22	02 43 06.27	23.922	14 06 55.3	144.79	22	04 46 03.07	27.169	23 31 44.8	82.29
23	02 45 30.01	23.992	N. 14 21 21.8	144.02	23	04 48 46.24	27.220	N. 23 39 53.2	80.50
Monday 26.					Wednesday 28.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	02 47 54.17	24.062	N. 14 35 43.5	143.21	00	04 51 29.71	27.269	N. 23 47 50.8	78.69
01	02 50 18.75	24.132	14 50 00.3	142.38	01	04 54 13.47	27.318	23 55 37.5	76.87
02	02 52 43.75	24.203	15 04 12.0	141.53	02	04 56 57.52	27.365	24 03 13.2	75.03
03	02 55 09.18	24.273	15 18 18.6	140.66	03	04 59 41.85	27.410	24 10 37.9	73.18
04	02 57 35.03	24.345	15 32 19.9	139.76	04	05 02 26.44	27.453	24 17 51.4	71.31
05	03 00 01.32	24.418	15 46 15.7	138.84	05	05 05 11.29	27.496	24 24 53.6	69.43
06	03 02 28.04	24.488	16 00 06.0	137.90	06	05 07 56.39	27.536	24 31 44.6	67.54
07	03 04 55.18	24.560	16 13 50.5	136.93	07	05 10 41.72	27.574	24 38 24.1	65.63
08	03 07 22.76	24.633	16 27 29.2	135.95	08	05 13 27.28	27.612	24 44 52.2	63.73
09	03 09 50.78	24.706	16 41 01.9	134.94	09	05 16 13.06	27.647	24 51 08.8	61.80
10	03 12 19.23	24.778	16 54 28.5	133.91	10	05 18 59.04	27.680	24 57 13.8	59.86
11	03 14 48.12	24.851	17 07 48.8	132.85	11	05 21 45.22	27.713	25 03 07.1	57.90
12	03 17 17.44	24.923	17 21 02.7	131.78	12	05 24 31.59	27.743	25 08 48.6	55.94
13	03 19 47.20	24.996	17 34 10.1	130.68	13	05 27 18.14	27.772	25 14 18.4	53.98
14	03 22 17.39	25.069	17 47 10.9	129.56	14	05 30 04.85	27.798	25 19 36.3	51.99
15	03 24 48.03	25.143	18 00 04.8	128.41	15	05 32 51.71	27.823	25 24 42.3	50.01
16	03 27 19.10	25.214	18 12 51.8	127.24	16	05 35 38.72	27.846	25 29 36.4	48.01
17	03 29 50.60	25.287	18 25 31.7	126.05	17	05 38 25.86	27.866	25 34 18.4	46.01
18	03 32 22.54	25.360	18 38 04.4	124.83	18	05 41 13.11	27.884	25 38 48.5	44.01
19	03 34 54.92	25.432	18 50 29.7	123.59	19	05 44 00.47	27.901	25 43 06.5	41.99
20	03 37 27.72	25.503	19 02 47.5	122.34	20	05 46 47.92	27.916	25 47 12.4	39.97
21	03 40 00.95	25.575	19 14 57.8	121.07	21	05 49 35.46	27.929	25 51 06.1	37.94
22	03 42 34.62	25.647	19 27 00.3	119.76	22	05 52 23.07	27.939	25 54 47.7	35.92
23	03 45 08.71	25.718	19 38 54.9	118.43	23	05 55 10.73	27.948	25 58 17.1	33.88
24	03 47 43.23	25.788	N. 19 50 41.5	117.09	24	05 57 58.45	27.956	N. 26 01 34.2	31.84

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 29.					Friday 30.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	05 57 58.45	27.956	N. 26 01 34.2	31.84	00	07 04 45.24	27.499	N. 26 19 21.6	16.65
01	06 00 46.20	27.960	26 04 39.2	29.80	01	07 07 30.11	27.455	26 17 35.9	18.59
02	06 03 33.97	27.963	26 07 31.8	27.75	02	07 10 14.70	27.409	26 15 38.5	20.53
03	06 06 21.75	27.963	26 10 12.2	25.71	03	07 12 59.02	27.362	26 13 29.5	22.45
04	06 09 09.53	27.962	26 12 40.3	23.66	04	07 15 43.05	27.313	26 11 09.1	24.36
05	06 11 57.29	27.958	26 14 56.1	21.62	05	07 18 26.78	27.263	26 08 37.2	26.27
06	06 14 45.02	27.952	26 16 59.7	19.58	06	07 21 10.21	27.211	26 05 53.9	28.16
07	06 17 32.71	27.944	26 18 51.0	17.53	07	07 23 53.31	27.157	26 02 59.3	30.03
08	06 20 20.35	27.934	26 20 30.0	15.48	08	07 26 36.09	27.102	25 59 53.6	31.88
09	06 23 07.92	27.922	26 21 56.8	13.44	09	07 29 18.54	27.045	25 56 36.7	33.74
10	06 25 55.42	27.908	26 23 11.3	11.40	10	07 32 00.63	26.986	25 53 08.7	35.58
11	06 28 42.82	27.892	26 24 13.6	09.36	11	07 34 42.37	26.927	25 49 29.7	37.41
12	06 31 30.12	27.874	26 25 03.6	07.32	12	07 37 23.75	26.865	25 45 39.8	39.22
13	06 34 17.31	27.853	26 25 41.4	05.29	13	07 40 04.75	26.802	25 41 39.1	41.01
14	06 37 04.36	27.831	26 26 07.1	03.27	14	07 42 45.37	26.738	25 37 27.7	42.78
15	06 39 51.28	27.807	26 26 20.6	01.23	15	07 45 25.60	26.673	25 33 05.7	44.55
16	06 42 38.04	27.779	26 26 21.9	00.78	16	07 48 05.44	26.606	25 28 33.1	46.31
17	06 45 24.63	27.751	26 26 11.2	02.78	17	07 50 44.87	26.537	25 23 50.0	48.03
18	06 48 11.05	27.722	26 25 48.5	04.79	18	07 53 23.88	26.468	25 18 56.7	49.75
19	06 50 57.29	27.689	26 25 13.7	06.78	19	07 56 02.48	26.398	25 13 53.0	51.46
20	06 53 43.32	27.655	26 24 27.1	08.77	20	07 58 40.66	26.327	25 08 39.2	53.13
21	06 56 29.15	27.619	26 23 28.5	10.76	21	08 01 18.41	26.254	25 03 15.4	54.80
22	06 59 14.75	27.581	26 22 18.0	12.73	22	08 03 55.71	26.180	24 57 41.6	56.46
23	07 02 00.12	27.541	26 20 55.7	14.70	23	08 06 32.57	26.106	24 51 57.9	58.10
24	07 04 45.24	27.499	N. 26 19 21.6	16.65	24	08 09 08.98	26.031	N. 24 46 04.4	59.72

PHASES OF THE MOON.

							n m
Nov. 4	|	( Last Quarter ..	..	..	..	..	14 06.3
„ 12	|	☉ New Moon ..	..	..	..	..	09 35.3
„ 20	|	) First Quarter..	..	..	..	..	13 35.3
„ 27	|	○ Full Moon ..	..	..	..	..	09 05.5
							n
Nov. 14	|	( Apogee ..	..	..	..	..	08.1
„ 27	|	( Perigee ..	..	..	..	..	13.5

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semi-diameter passing the Meridian.*	Equation of Time, to be subtracted from		Var. in 1 hour.
		Apparent Right Ascension	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.		added to Apparent Time.		
		h m s	s	° ' "	"	m s	m s	s	
Sat.	1	16 29 25.82	10.794	S. 21 49 04.1	23.30	1 10.23	10 55.00	0.935	
Sun.	2	16 33 45.21	10.822	21 58 10.8	22.25	1 10.31	10 32.22	0.962	
Mon.	3	16 38 05.25	10.848	22 06 52.1	21.19	1 10.39	10 08.81	0.989	
Tues.	4	16 42 25.91	10.874	22 15 08.0	20.12	1 10.47	9 44.77	1.014	
Wed.	5	16 46 47.17	10.898	22 22 58.0	19.04	1 10.55	9 20.13	1.038	
Thur.	6	16 51 09.00	10.921	22 30 21.9	17.95	1 10.62	8 54.93	1.062	
Frid.	7	16 55 31.38	10.943	22 37 19.5	16.85	1 10.69	8 29.19	1.084	
Sat.	8	16 59 54.26	10.964	22 43 50.5	15.74	1 10.76	8 02.93	1.104	
Sun.	9	17 04 17.63	10.983	22 49 54.7	14.62	1 10.82	7 36.19	1.124	
Mon.	10	17 08 41.46	11.002	22 55 32.0	13.49	1 10.88	7 09.00	1.142	
Tues.	11	17 13 05.70	11.018	23 00 42.0	12.35	1 10.93	6 41.39	1.159	
Wed.	12	17 17 30.33	11.034	23 05 24.7	11.20	1 10.98	6 13.40	1.174	
Thur.	13	17 21 55.31	11.049	23 09 39.8	10.05	1 11.02	5 45.06	1.188	
Frid.	14	17 26 20.60	11.060	23 13 27.2	8.90	1 11.06	5 16.40	1.200	
Sat.	15	17 30 46.17	11.071	23 16 46.8	7.73	1 11.10	4 47.46	1.211	
Sun.	16	17 35 11.99	11.080	23 19 38.4	6.57	1 11.13	4 18.28	1.220	
Mon.	17	17 39 38.02	11.088	23 22 02.0	5.40	1 11.16	3 48.89	1.228	
Tues.	18	17 44 04.22	11.095	23 23 57.4	4.22	1 11.19	3 19.31	1.235	
Wed.	19	17 48 30.55	11.100	23 25 24.6	3.05	1 11.20	2 49.64	1.240	
Thur.	20	17 52 56.98	11.103	23 26 25.6	1.87	1 11.22	2 19.85	1.243	
Frid.	21	17 57 23.48	11.105	23 26 54.2	0.69	1 11.23	1 49.99	1.245	
Sat.	22	18 01 50.01	11.105	23 26 56.6	0.49	1 11.23	1 20.11	1.245	
Sun.	23	18 06 16.53	11.105	23 26 30.6	1.67	1 11.23	0 50.23	1.245	
Mon.	24	18 10 43.02	11.103	23 25 36.4	2.85	1 11.23	0 20.38	1.243	
Tues.	25	18 15 09.44	11.099	23 24 13.9	4.02	1 11.22	0 09.40	1.239	
Wed.	26	18 19 35.77	11.095	23 22 23.2	5.20	1 11.21	0 39.09	1.235	
Thur.	27	18 24 01.98	11.089	23 20 04.4	6.37	1 11.19	1 08.66	1.229	
Frid.	28	18 28 28.03	11.082	23 17 17.5	7.54	1 11.17	1 38.08	1.222	
Sat.	29	18 32 53.91	11.074	23 14 02.5	8.70	1 11.14	2 07.32	1.214	
Sun.	30	18 37 19.59	11.065	23 10 19.6	9.87	1 11.11	2 36.36	1.205	
Mon.	31	18 41 45.03	11.055	23 06 09.0	11.02	1 11.07	3 05.16	1.195	
Tues.	32	18 46 10.20	11.043	S. 23 01 30.6	12.17	1 11.03	3 33.69	1.183	

* Mean Time of the Semidiameter passing may be found by subtracting 0^s 19 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be subtracted from added to Apparent Time	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*		
		h m s	° ' "	"	m	h m s
Sat.	1	16 29 27.78	S. 21 49 08.3	16 15 02	10 54.85	16 40 22.60
Sun.	2	16 33 47.11	21 58 14.7	16 15.16	10 52.05	16 44 19.16
Mon.	3	16 38 07.08	22 06 55.7	16 15.30	10 08.64	16 48 15.72
Tues.	4	16 42 27.68	22 15 11.2	16 15.44	9 44.60	16 52 12.28
Wed.	5	16 46 48.87	22 23 00.9	16 15.57	9 19.97	16 56 08.84
Thur.	6	16 51 10.62	22 30 24.5	16 15.70	8 54.77	17 00 05.40
Frid.	7	16 55 32.92	22 37 21.9	16 15.82	8 29.03	17 04 01.95
Sat.	8	16 59 55.73	22 43 52.6	16 15.94	8 02.78	17 07 58.51
Sun.	9	17 04 19.02	22 49 56.6	16 16.06	7 36.05	17 11 55.07
Mon.	10	17 08 42.77	22 55 33.6	16 16.17	7 08.86	17 15 51.63
Tues.	11	17 13 06.93	23 00 43.4	16 16.28	6 41.26	17 19 48.19
Wed.	12	17 17 31.47	23 05 25.8	16 16.39	6 13.28	17 23 44.75
Thur.	13	17 21 56.36	23 09 40.8	16 16.49	5 44.94	17 27 41.31
Frid.	14	17 26 21.57	23 13 28.0	16 16.59	5 16.29	17 31 37.86
Sat.	15	17 30 47.06	23 16 47.4	16 16.69	4 47.37	17 35 34.42
Sun.	16	17 35 12.79	23 19 38.9	16 16.78	4 18.19	17 39 30.98
Mon.	17	17 39 38.72	23 22 02.3	16 16.87	3 48.82	17 43 27.54
Tues.	18	17 44 04.83	23 23 57.6	16 16.95	3 19.27	17 47 24.10
Wed.	19	17 48 31.07	23 25 24.8	16 17.03	2 49.58	17 51 20.66
Thur.	20	17 52 57.41	23 26 23.6	16 17.11	2 19.80	17 55 17.22
Frid.	21	17 57 23.82	23 26 54.2	16 17.18	1 49.96	17 59 13.78
Sat.	22	18 01 50.25	23 26 56.6	16 17.24	1 20.08	18 03 10.33
Sun.	23	18 06 16.68	23 26 30.6	16 17.30	0 50.21	18 07 06.89
Mon.	24	18 10 43.08	23 25 36.4	16 17.35	0 20.37	18 11 03.45
Tues.	25	18 15 09.41	23 24 13.9	16 17.40	0 09.40	18 15 00.01
Wed.	26	18 19 35.65	23 22 23.3	16 17.44	0 39.08	18 18 56.57
Thur.	27	18 24 01.77	23 20 04.5	16 17.47	1 08.64	18 22 53.13
Frid.	28	18 28 27.73	23 17 17.7	16 17.50	1 38.05	18 26 49.69
Sat.	29	18 32 53.52	23 14 02.8	16 17.52	2 07.28	18 30 46.25
Sun.	30	18 37 19.11	23 10 20.1	16 17.53	2 36.30	18 34 42.80
Mon.	31	18 41 44.46	23 06 09.5	16 17.54	3 05.09	18 38 39.36
Tues.	32	18 46 09.54	S. 23 01 31.3	16 17.54	3 33.62	18 42 35.92

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day of the Month.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
	12h.	12h.			oh.	12h.	oh.	12h.
	° ' "	"		h m s	' "	' "	' "	' "
1	249 04 00.8	N. 0.81	9.9937929	19 18 25.37	16 16.01	16 08.57	59 42.09	59 14.77
2	250 04 51.3	0.85	.9937281	19 14 29.46	16 00.87	15 53.09	58 46.52	58 17.96
3	251 05 43.2	0.87	.9936654	19 10 33.55	15 45.38	15 37.89	57 49.69	57 22.17
4	252 06 36.5	0.86	9.9936048	19 06 37.64	15 30.71	15 23.93	56 55.82	56 30.93
5	253 07 31.1	0.82	.9935460	19 02 41.72	15 17.61	15 11.81	56 07.75	55 46.45
6	254 08 27.0	0.75	.9934890	18 58 45.81	15 06.54	15 01.82	55 27.11	55 09.78
7	255 09 24.2	0.65	9.9934337	18 54 49.90	14 57.65	14 54.01	54 54.47	54 41.14
8	256 10 22.5	0.53	.9933801	18 50 53.99	14 50.91	14 48.30	54 29.73	54 20.18
9	257 11 22.0	0.40	.9933281	18 46 58.07	14 46.18	14 44.51	54 12.38	54 06.24
10	258 12 22.4	0.27	9.9932777	18 43 02.16	14 43.26	14 42.42	54 01.67	53 58.58
11	259 13 23.7	0.14	.9932288	18 39 06.25	14 41.96	14 41.86	53 56.89	53 56.53
12	260 14 25.9	N. 0.01	.9931815	18 35 10.34	14 42.12	14 42.71	53 57.47	53 59.64
13	261 15 28.9	S. 0.11	9.9931357	18 31 14.42	14 43.64	14 44.91	54 03.06	54 07.73
14	262 16 32.6	0.21	.9930915	18 27 18.51	14 46.53	14 48.50	54 13.66	54 20.91
15	263 17 36.9	0.28	.9930489	18 23 22.60	14 50.85	14 53.58	54 29.52	54 39.55
16	264 18 41.6	0.33	9.9930080	18 19 26.68	14 56.72	15 00.29	54 51.08	55 04.17
17	265 19 46.9	0.36	.9929689	18 15 30.77	15 04.30	15 08.75	55 18.87	55 35.24
18	266 20 52.4	0.36	.9929316	18 11 34.86	15 13.67	15 19.04	55 53.28	56 12.99
19	267 21 58.3	0.33	9.9928963	18 07 38.95	15 24.84	15 31.06	56 34.30	56 57.12
20	268 23 04.4	0.26	.9928632	18 03 43.03	15 37.64	15 44.52	57 21.27	57 46.52
21	269 24 10.8	0.16	.9928322	17 59 47.12	15 51.61	15 58.81	58 12.55	58 38.98
22	270 25 17.2	S. 0.05	9.9928036	17 55 51.21	16 05.99	16 12.99	59 05.32	59 31.02
23	271 26 23.8	N. 0.08	.9927776	17 51 55.29	16 19.65	16 25.78	59 55.45	60 17.96
24	272 27 30.6	0.22	.9927543	17 47 59.38	16 31.20	16 35.73	60 37.86	60 54.48
25	273 28 37.4	0.35	9.9927338	17 44 03.47	16 39.20	16 41.47	61 07.21	61 15.54
26	274 29 44.5	0.47	.9927162	17 40 07.56	16 42.43	16 42.04	61 19.08	61 17.64
27	275 30 51.9	0.58	.9927016	17 36 11.64	16 40.28	16 37.21	61 11.19	60 59.91
28	276 31 59.5	0.67	9.9926898	17 32 15.73	16 32.92	16 27.54	60 44.15	60 24.41
29	277 33 07.4	0.73	.9926810	17 28 19.82	16 21.24	16 14.23	60 01.32	59 35.57
30	278 34 15.7	0.75	.9926749	17 24 23.91	16 06.69	15 58.82	59 07.89	58 39.02
31	279 35 24.4	0.74	.9926716	17 20 27.99	15 50.82	15 42.85	58 09.64	57 40.40
32	280 36 33.4	N. 0.70	9.9926708	17 16 32.08	15 35.07	15 27.61	57 11.84	56 44.45

MEAN TIME.

Day of the Month.	THE MOON'S						
	Longitude.		Latitude.		Age.	Meridian Passage.	
	oh.	12h.	oh.	12h.	oh.	Upper.	Lower.
	° ' "	° ' "	° ' "	° ' "	d	h m	h m
1	119 06 49.7	126 15 51.7	N. 4 31 26.1	N. 4 49 49.3	18.60	03 39.6	16 09.1
2	133 18 12.1	140 13 42.7	5 03 31.2	5 12 32.7	19.60	04 37.2	17 03.9
3	147 02 24.6	153 44 26.9	5 16 59.6	5 17 01.3	20.60	05 29.4	17 53.6
4	160 20 05.5	166 49 41.7	5 12 50.6	5 04 42.2	21.60	06 16.9	18 39.3
5	173 13 40.7	179 32 30.4	4 52 52.4	4 37 38.0	22.60	07 00.9	19 22.1
6	185 46 40.7	191 56 42.3	4 19 16.8	3 58 06.7	23.60	07 42.9	20 03.4
7	198 03 05.7	204 06 21.2	3 34 25.9	3 08 32.7	24.60	08 23.8	20 44.4
8	210 06 57.8	216 05 23.5	2 40 45.5	2 11 23.0	25.60	09 05.1	21 26.1
9	222 02 04.5	227 57 25.3	1 40 43.7	1 09 06.8	26.60	09 47.5	22 09.4
10	233 51 48.3	239 45 34.8	N. 0 36 51.3	N. 0 04 16.5	27.60	10 31.8	22 54.7
11	245 39 04.0	251 32 33.8	S. 0 28 18.1	S. 1 00 33.2	28.60	11 18.2	23 42.4
12	257 26 20.6	263 20 40.0	1 32 09.4	2 02 47.5	29.60	12 07.0	* *
13	269 15 46.9	275 11 55.6	2 32 08.8	2 59 54.7	0.79	12 57.4	00 32.1
14	281 09 20.3	287 08 15.5	3 25 47.4	3 49 30.1	1.79	13 48.5	01 22.9
15	293 08 56.0	299 11 37.6	4 10 46.5	4 29 21.2	2.79	14 39.2	02 14.0
16	305 16 36.8	311 24 11.4	4 45 00.0	4 57 29.8	3.79	15 28.7	03 04.1
17	317 34 40.3	323 48 23.6	5 06 38.7	5 12 16.0	4.79	16 16.4	03 52.7
18	330 05 42.4	336 26 58.8	5 14 12.3	5 12 19.8	5.79	17 02.7	04 39.6
19	342 52 35.1	349 22 53.5	5 06 32.4	4 56 45.9	6.79	17 48.1	05 25.4
20	355 58 15.6	2 39 01.4	4 42 58.6	4 25 11.4	7.79	18 33.6	06 10.7
21	9 25 27.9	16 17 48.7	4 03 28.5	3 37 58.1	8.79	19 20.5	06 56.8
22	23 16 12.1	30 20 39.8	3 08 52.7	2 36 30.3	9.79	20 10.2	07 44.9
23	37 31 06.1	44 47 16.2	2 01 14.0	1 23 33.4	10.79	21 04.0	08 36.5
24	52 08 45.3	59 34 58.0	S. 0 44 03.8	S. 0 03 25.6	11.79	22 02.7	09 32.7
25	67 05 08.5	74 38 21.0	N. 0 37 35.6	N. 1 18 11.6	12.79	23 06.3	10 34.0
26	82 13 30.7	89 49 26.6	1 57 32.6	2 34 49.7	13.79	* *	11 39.4
27	97 24 53.2	104 58 34.4	3 09 17.3	3 40 15.0	14.79	00 12.7	12 46.4
28	112 29 16.0	119 55 49.3	4 07 09.2	4 29 34.6	15.79	01 18.6	13 50.4
29	127 17 14.1	134 32 39.8	4 47 14.4	5 00 00.3	16.79	02 20.8	14 50.0
30	141 41 27.7	148 43 11.6	5 07 51.8	5 10 54.9	17.79	03 17.7	15 44.0
31	155 37 36.9	162 24 40.7	5 09 21.5	5 03 27.3	18.79	04 09.1	16 33.0
32	169 04 30.2	175 37 21.6	N. 4 53 31.0	N. 4 39 52.9	19.79	04 56.0	17 18.2

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension	Var. in 100	Declination	Var. in 100	Hour	Right Ascension	Var. in 100	Declination	Var. in 100
Saturday 1.					Monday 3.				
00	08 05 08	20 531	N. 24 46 04.4	59.72	00	10 04 34.84	22 064	N. 17 27 39.5	116.00
01	08 11 44.04	25 054	24 40 01.3	61.31	01	10 06 46.99	21 988	17 16 01.2	116.74
02	08 14 20.43	25 177	24 33 48.7	62.89	02	10 08 58.69	21 911	17 04 18.6	117.47
03	08 16 55.46	25 300	24 27 26.6	64.46	03	10 11 09.92	21 834	16 52 31.6	118.19
04	08 19 30.02	25 420	24 20 55.2	66.01	04	10 13 20.70	21 760	16 40 40.3	118.89
05	08 22 04.10	25 540	24 14 14.5	67.53	05	10 15 31.04	21 686	16 28 44.9	119.57
06	08 24 37.70	25 659	24 07 24.8	69.04	06	10 17 40.93	21 612	16 16 45.5	120.23
07	08 27 10.82	25 780	24 00 26.0	70.54	07	10 19 50.38	21 538	16 04 42.1	120.88
08	08 29 43.46	25 900	23 53 18.3	72.02	08	10 21 59.39	21 466	15 52 34.9	121.53
09	08 32 15.61	25 917	23 46 01.8	73.48	09	10 24 07.97	21 394	15 40 23.8	122.15
10	08 34 47.26	25 933	23 38 36.6	74.92	10	10 26 16.12	21 323	15 28 09.1	122.75
11	08 37 18.41	25 951	23 31 02.8	76.33	11	10 28 23.84	21 253	15 15 50.8	123.35
12	08 39 49.07	25 968	23 23 20.6	77.73	12	10 30 31.15	21 183	15 03 28.9	123.93
13	08 42 19.23	25 985	23 15 30.0	79.12	13	10 32 38.04	21 114	14 51 03.6	124.49
14	08 44 48.88	25 999	23 07 31.2	80.48	14	10 34 44.52	21 046	14 38 35.0	125.04
15	08 47 18.02	25 985	22 59 24.3	81.82	15	10 36 50.59	20 978	14 26 03.1	125.58
16	08 49 46.66	24 737	22 51 09.4	83.15	16	10 38 56.26	20 913	14 13 28.0	126.10
17	08 52 14.78	24 625	22 42 46.5	84.47	17	10 41 01.54	20 847	14 00 49.9	126.61
18	08 54 42.40	24 561	22 34 15.8	85.75	18	10 43 06.42	20 782	13 48 08.7	127.12
19	08 57 09.51	24 475	22 25 37.5	87.02	19	10 45 10.92	20 718	13 35 24.5	127.60
20	08 59 36.10	24 369	22 16 51.6	88.27	20	10 47 15.03	20 653	13 22 37.5	128.07
21	09 02 02.18	24 304	22 07 58.3	89.50	21	10 49 18.76	20 591	13 09 47.7	128.53
22	09 04 27.75	24 218	21 58 57.6	90.73	22	10 51 22.12	20 529	12 56 55.2	128.98
23	09 06 52.80	24 132	N. 21 49 40.6	91.92	23	10 53 25.11	20 468	N. 12 44 00.0	129.41
Sunday 2.					Tuesday 4.				
00	09 09 17.33	24 046	N. 21 40 54.6	93.08	00	10 55 27.73	20 408	N. 12 31 02.3	129.83
01	09 11 41.35	23 961	21 31 12.6	94.25	01	10 57 30.00	20 348	12 18 02.1	130.23
02	09 14 04.86	23 876	21 21 43.6	95.39	02	10 59 31.91	20 289	12 04 59.5	130.63
03	09 16 27.86	23 790	21 12 07.9	96.51	03	11 01 33.47	20 232	11 51 54.6	131.01
04	09 18 50.34	23 704	21 02 25.5	97.62	04	11 03 34.69	20 175	11 38 47.4	131.38
05	09 21 12.31	23 620	20 52 36.5	98.70	05	11 05 35.57	20 119	11 25 38.0	131.74
06	09 23 33.78	23 535	20 42 41.1	99.77	06	11 07 36.12	20 063	11 12 26.5	132.09
07	09 25 54.73	23 449	20 32 39.3	100.82	07	11 09 36.33	20 008	10 59 12.9	132.43
08	09 28 15.17	23 363	20 22 31.3	101.84	08	11 11 36.22	19 955	10 45 57.4	132.75
09	09 30 35.11	23 278	20 12 17.2	102.86	09	11 13 35.79	19 903	10 32 39.9	133.07
10	09 32 54.54	23 192	20 01 57.0	103.87	10	11 15 35.05	19 851	10 19 20.6	133.37
11	09 35 13.47	23 107	19 51 30.8	104.84	11	11 17 34.00	19 799	10 05 59.5	133.65
12	09 37 31.89	23 021	19 41 08.9	105.79	12	11 19 32.64	19 748	9 52 36.8	133.93
13	09 39 49.82	22 936	19 30 21.3	106.74	13	11 21 30.98	19 699	9 39 12.4	134.20
14	09 42 07.25	22 850	19 19 38.0	107.67	14	11 23 29.03	19 651	9 25 46.4	134.46
15	09 44 24.19	22 765	19 08 49.3	108.58	15	11 25 26.79	19 603	9 12 18.9	134.71
16	09 46 40.63	22 679	18 57 55.1	109.47	16	11 27 24.27	19 557	8 58 49.9	134.95
17	09 48 56.59	22 593	18 46 55.7	110.34	17	11 29 21.47	19 510	8 45 19.5	135.18
18	09 51 12.06	22 508	18 35 51.0	111.21	18	11 31 18.39	19 465	8 31 47.8	135.39
19	09 53 27.04	22 422	18 24 41.2	112.04	19	11 33 15.05	19 421	8 18 14.8	135.60
20	09 55 41.55	22 337	18 13 26.5	112.87	20	11 35 11.44	19 377	8 04 40.6	135.79
21	09 57 55.58	22 251	18 02 06.8	113.68	21	11 37 07.57	19 334	7 51 05.3	135.98
22	10 00 09.14	22 166	17 50 42.4	114.47	22	11 39 03.45	19 293	7 37 28.8	136.17
23	10 02 22.22	22 081	17 39 13.2	115.24	23	11 40 59.08	19 252	7 23 51.3	136.33
24	10 04 34.44	22 064	N. 17 27 39.5	116.00	24	11 42 54.47	19 212	N. 7 10 12.9	136.48

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Wednesday 5.					Friday 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	11 42 54.47	19.212	N. 7 10 12.9	136.48	00	13 12 02.72	18.231	S. 3 46 39.7	134.18
01	11 44 49.62	19.172	6 56 33.5	136.63	01	13 13 52.10	18.228	4 00 04.1	133.94
02	11 46 44.53	19.133	6 42 53.3	136.77	02	13 15 41.46	18.228	4 13 27.0	133.70
03	11 48 39.22	19.096	6 29 12.3	136.90	03	13 17 30.83	18.228	4 26 48.5	133.46
04	11 50 33.68	19.058	6 15 30.5	137.03	04	13 19 20.19	18.227	4 40 08.5	133.21
05	11 52 27.92	19.023	6 01 48.0	137.13	05	13 21 09.55	18.228	4 53 27.0	132.94
06	11 54 21.96	18.988	5 48 04.9	137.23	06	13 22 58.92	18.229	5 06 43.8	132.68
07	11 56 15.78	18.953	5 34 21.2	137.33	07	13 24 48.30	18.232	5 19 59.1	132.40
08	11 58 09.40	18.920	5 20 37.0	137.41	08	13 26 37.70	18.235	5 33 12.6	132.11
09	12 00 02.82	18.888	5 06 52.3	137.49	09	13 28 27.12	18.238	5 46 24.4	131.83
10	12 01 56.05	18.856	4 53 07.1	137.56	10	13 30 16.56	18.242	5 59 34.5	131.53
11	12 03 49.09	18.824	4 39 21.6	137.61	11	13 32 06.02	18.247	6 12 42.8	131.23
12	12 05 41.94	18.794	4 25 35.8	137.66	12	13 33 55.52	18.253	6 25 49.2	130.91
13	12 07 34.62	18.765	4 11 49.7	137.70	13	13 35 45.05	18.258	6 38 53.7	130.60
14	12 09 27.12	18.737	3 58 03.4	137.73	14	13 37 34.62	18.266	6 51 56.4	130.28
15	12 11 19.46	18.709	3 44 16.9	137.76	15	13 39 24.24	18.273	7 04 57.0	129.94
16	12 13 11.63	18.682	3 30 30.3	137.77	16	13 41 13.90	18.281	7 17 55.7	129.61
17	12 15 03.64	18.655	3 16 43.7	137.78	17	13 43 03.61	18.290	7 30 52.3	129.26
18	12 16 55.49	18.630	3 02 57.0	137.78	18	13 44 53.38	18.300	7 43 46.8	128.91
19	12 18 47.20	18.606	2 49 10.3	137.77	19	13 46 43.21	18.309	7 56 39.2	128.55
20	12 20 38.76	18.582	2 35 23.8	137.74	20	13 48 33.09	18.320	8 09 29.4	128.18
21	12 22 30.18	18.559	2 21 37.4	137.73	21	13 50 23.05	18.332	8 22 17.3	127.80
22	12 24 21.47	18.538	2 07 51.1	137.69	22	13 52 13.07	18.343	8 35 03.0	127.43
23	12 26 12.63	18.516	N. 1 54 05.1	137.65	23	13 54 03.17	18.356	S. 8 47 46.4	127.04
Thursday 6.					Saturday 8.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	12 28 03.66	18.495	N. 1 40 19.3	137.60	00	13 55 53.34	18.368	S. 9 00 27.5	126.65
01	12 29 54.57	18.476	1 26 33.9	137.54	01	13 57 43.59	18.383	9 13 06.2	126.24
02	12 31 45.37	18.457	1 12 48.8	137.48	02	13 59 33.93	18.398	9 25 42.4	125.83
03	12 33 36.05	18.438	0 59 04.1	137.41	03	14 01 24.36	18.412	9 38 16.2	125.42
04	12 35 26.63	18.421	0 45 19.9	137.33	04	14 03 14.87	18.427	9 50 47.4	124.99
05	12 37 17.10	18.404	0 31 36.1	137.24	05	14 05 05.48	18.443	10 03 16.1	124.57
06	12 39 07.48	18.388	0 17 53.0	137.14	06	14 06 56.19	18.460	10 15 42.2	124.13
07	12 40 57.76	18.373	N. 0 04 10.4	137.05	07	14 08 47.00	18.477	10 28 05.7	123.68
08	12 42 47.95	18.359	S. 0 09 31.6	136.93	08	14 10 37.91	18.494	10 40 26.4	123.23
09	12 44 38.07	18.346	0 23 12.8	136.81	09	14 12 28.93	18.513	10 52 44.5	122.78
10	12 46 28.10	18.332	0 36 53.3	136.69	10	14 14 20.07	18.532	11 04 59.7	122.30
11	12 48 18.05	18.320	0 50 33.1	136.56	11	14 16 11.31	18.551	11 17 12.1	121.83
12	12 50 07.94	18.309	1 04 12.0	136.42	12	14 18 02.68	18.572	11 29 21.7	121.36
13	12 51 57.76	18.298	1 17 50.1	136.28	13	14 19 54.17	18.591	11 41 28.4	120.87
14	12 53 47.52	18.288	1 31 27.3	136.12	14	14 21 45.77	18.612	11 53 32.1	120.38
15	12 55 37.22	18.280	1 45 03.5	135.95	15	14 23 37.51	18.634	12 05 32.9	119.88
16	12 57 26.88	18.272	1 58 38.7	135.78	16	14 25 29.38	18.656	12 17 30.6	119.36
17	12 59 16.48	18.263	2 12 12.9	135.61	17	14 27 21.38	18.678	12 29 25.2	118.84
18	13 01 06.04	18.257	2 25 46.0	135.43	18	14 29 13.52	18.702	12 41 16.7	118.32
19	13 02 55.56	18.250	2 39 18.0	135.24	19	14 31 05.80	18.724	12 53 05.0	117.78
20	13 04 45.04	18.245	2 52 48.9	135.04	20	14 32 58.21	18.748	13 04 50.1	117.24
21	13 06 34.50	18.241	3 06 18.5	134.83	21	14 34 50.78	18.773	13 16 31.9	116.70
22	13 08 23.93	18.236	3 19 46.9	134.63	22	14 36 43.49	18.798	13 28 10.5	116.15
23	13 10 13.33	18.233	3 33 14.0	134.40	23	14 38 36.35	18.823	13 39 45.7	115.58
24	13 12 02.72	18.231	S. 3 46 39.7	134.18	24	14 40 29.37	18.849	S. 13 51 17.5	115.02

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
Sunday 9.					Tuesday 11.				
	h m s		° ' "			h m s		° ' "	
00	14 40 29.37	18.840	S. 13 51 17.5	115.02	00	16 14 37.00	20.460	S. 21 43 15.7	78.65
01	14 42 22.54	18.876	14 02 45.9	114.44	01	16 16 39.87	20.498	21 51 04.8	77.70
02	14 44 15.88	18.903	14 14 10.8	113.86	02	16 18 42.97	20.535	21 58 48.1	76.74
03	14 46 09.37	18.929	14 25 32.2	113.27	03	16 20 46.29	20.572	22 06 25.7	75.78
04	14 48 03.03	18.958	14 36 50.0	112.67	04	16 22 49.83	20.608	22 13 57.5	74.81
05	14 49 56.86	18.985	14 48 04.2	112.06	05	16 24 53.59	20.645	22 21 23.4	73.83
06	14 51 50.85	19.013	14 59 14.7	111.44	06	16 26 57.57	20.683	22 28 43.4	72.84
07	14 53 45.02	19.043	15 10 21.5	110.83	07	16 29 01.78	20.719	22 35 57.5	71.85
08	14 55 39.36	19.072	15 21 24.6	110.20	08	16 31 06.20	20.755	22 43 06.6	70.85
09	14 57 33.88	19.102	15 32 23.9	109.56	09	16 33 10.84	20.791	22 50 07.7	69.84
10	14 59 28.58	19.132	15 43 19.3	108.91	10	16 35 15.69	20.827	22 57 03.7	68.83
11	15 01 23.46	19.162	15 54 10.8	108.26	11	16 37 20.76	20.863	23 03 53.6	67.81
12	15 03 18.52	19.193	16 04 58.4	107.60	12	16 39 26.05	20.899	23 10 37.4	66.78
13	15 05 15.77	19.223	16 15 42.0	106.93	13	16 41 31.55	20.934	23 17 15.0	65.74
14	15 07 09.20	19.255	16 26 21.6	106.26	14	16 43 37.26	20.970	23 23 46.3	64.69
15	15 09 04.83	19.288	16 36 57.1	105.58	15	16 45 43.19	21.005	23 30 11.3	63.64
16	15 11 00.65	19.319	16 47 28.5	104.88	16	16 47 49.32	21.039	23 36 30.0	62.58
17	15 12 56.66	19.352	16 57 55.7	104.18	17	16 49 55.66	21.074	23 42 42.3	61.52
18	15 14 52.87	19.384	17 08 18.7	103.48	18	16 52 02.21	21.108	23 48 48.2	60.45
19	15 16 49.27	19.418	17 18 37.4	102.76	19	16 54 08.96	21.143	23 54 47.7	59.38
20	15 18 45.88	19.451	17 28 51.8	102.04	20	16 56 15.92	21.176	24 00 40.7	58.28
21	15 20 42.68	19.484	17 39 01.9	101.32	21	16 58 23.07	21.209	24 06 27.1	57.19
22	15 22 39.69	19.518	17 49 07.6	100.58	22	17 00 30.43	21.243	24 12 07.0	56.10
23	15 24 36.90	19.553	S. 17 59 08.8	99.83	23	17 02 37.98	21.275	S. 24 17 40.3	54.99
Monday 10.					Wednesday 12.				
	h m s		° ' "			h m s		° ' "	
00	15 26 34.32	19.588	S. 18 09 05.5	99.08	00	17 04 45.73	21.308	S. 24 23 06.9	53.88
01	15 28 31.95	19.622	18 18 57.7	98.32	01	17 06 53.67	21.340	24 28 26.9	52.77
02	15 30 29.78	19.657	18 28 45.3	97.55	02	17 09 01.81	21.372	24 33 40.1	51.63
03	15 32 27.83	19.692	18 38 28.3	96.77	03	17 11 10.13	21.403	24 38 46.5	50.51
04	15 34 26.08	19.727	18 48 06.5	95.98	04	17 13 18.64	21.433	24 43 46.2	49.38
05	15 36 24.55	19.763	18 57 40.1	95.19	05	17 15 27.33	21.463	24 48 59.0	48.23
06	15 38 23.23	19.798	19 07 08.8	94.39	06	17 17 36.20	21.493	24 53 24.9	47.08
07	15 40 22.13	19.834	19 16 32.8	93.58	07	17 19 45.24	21.523	24 58 04.0	45.93
08	15 42 21.24	19.870	19 25 51.8	92.77	08	17 21 54.47	21.552	25 02 36.1	44.78
09	15 44 20.57	19.907	19 35 06.0	91.94	09	17 24 03.86	21.580	25 07 01.3	43.61
10	15 46 20.12	19.943	19 44 15.1	91.11	10	17 26 13.43	21.608	25 11 19.4	42.43
11	15 48 19.88	19.979	19 53 19.3	90.28	11	17 28 23.16	21.636	25 15 30.5	41.26
12	15 50 19.87	20.017	20 02 18.4	89.44	12	17 30 33.06	21.663	25 19 34.5	40.08
13	15 52 20.08	20.053	20 11 12.4	88.57	13	17 32 43.12	21.690	25 23 31.4	38.89
14	15 54 20.50	20.089	20 20 01.2	87.70	14	17 34 53.31	21.716	25 27 21.2	37.70
15	15 56 21.15	20.127	20 28 44.8	86.83	15	17 37 03.71	21.741	25 31 03.8	36.50
16	15 58 22.02	20.163	20 37 23.2	85.96	16	17 39 14.23	21.766	25 34 39.2	35.30
17	16 00 23.11	20.201	20 45 56.3	85.07	17	17 41 24.90	21.790	25 38 07.4	34.09
18	16 02 24.43	20.238	20 54 24.0	84.18	18	17 43 35.71	21.814	25 41 28.3	32.88
19	16 04 25.97	20.275	21 02 46.4	83.28	19	17 45 46.67	21.838	25 44 41.9	31.67
20	16 06 27.73	20.312	21 11 03.3	82.37	20	17 47 57.76	21.860	25 47 48.3	30.45
21	16 08 29.71	20.349	21 19 14.8	81.45	21	17 50 08.99	21.882	25 50 47.3	29.23
22	16 10 31.92	20.387	21 27 20.7	80.52	22	17 52 20.34	21.903	25 53 39.0	27.99
23	16 12 34.35	20.423	21 35 21.0	79.58	23	17 54 31.83	21.924	25 56 23.2	26.76
24	16 14 37.00	20.460	S. 21 43 15.7	78.65	24	17 56 43.43	21.944	S. 25 59 00.1	25.53

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Thursday 13.					Saturday 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
00	17 56 43.43	21.944	S. 25 59 00.1	25.53	00	19 43 03.70	22.092	S. 25 34 53.3	35.74
01	17 58 55.16	21.964	26 01 29.5	24.28	01	19 45 16.21	22.078	25 31 15.1	37.00
02	18 01 07.00	21.983	26 03 51.5	23.04	02	19 47 28.64	22.064	25 27 29.3	38.26
03	18 03 18.95	22.001	26 06 06.0	21.79	03	19 49 40.98	22.050	25 23 36.0	39.51
04	18 05 31.01	22.018	26 08 13.0	20.54	04	19 51 53.24	22.034	25 19 35.2	40.76
05	18 07 43.17	22.035	26 10 12.5	19.29	05	19 54 05.39	22.018	25 15 26.9	42.01
06	18 09 55.43	22.052	26 12 04.5	18.03	06	19 56 17.45	22.003	25 11 11.1	43.24
07	18 12 07.79	22.068	26 13 48.9	16.77	07	19 58 29.42	21.986	25 06 48.0	44.48
08	18 14 20.24	22.082	26 15 25.7	15.51	08	20 00 41.28	21.968	25 02 17.4	45.72
09	18 16 32.77	22.096	26 16 55.0	14.25	09	20 02 53.03	21.949	24 57 39.4	46.95
10	18 18 45.39	22.110	26 18 16.7	12.98	10	20 05 04.67	21.931	24 52 54.0	48.18
11	18 20 58.09	22.123	26 19 30.7	11.70	11	20 07 16.20	21.912	24 48 01.3	49.40
12	18 23 10.86	22.134	26 20 37.1	10.43	12	20 09 27.61	21.893	24 43 01.2	50.63
13	18 25 23.70	22.146	26 21 35.9	09.16	13	20 11 38.91	21.873	24 37 53.8	51.83
14	18 27 36.61	22.157	26 22 27.0	07.88	14	20 13 50.08	21.853	24 32 39.2	53.04
15	18 29 49.58	22.166	26 23 10.4	06.59	15	20 16 01.14	21.832	24 27 17.3	54.25
16	18 32 02.60	22.175	26 23 46.1	05.32	16	20 18 12.06	21.810	24 21 48.2	55.44
17	18 34 15.68	22.184	26 24 14.2	04.03	17	20 20 22.86	21.789	24 16 12.0	56.64
18	18 36 28.81	22.192	26 24 34.5	02.74	18	20 22 33.53	21.767	24 10 28.5	57.83
19	18 38 41.98	22.198	26 24 47.1	01.47	19	20 24 44.06	21.744	24 04 38.0	59.02
20	18 40 55.19	22.204	26 24 52.1	00.18	20	20 26 54.46	21.723	23 58 40.3	60.21
21	18 43 08.43	22.210	26 24 49.3	01.12	21	20 29 04.73	21.699	23 52 35.5	61.38
22	18 45 21.71	22.215	26 24 38.7	02.47	22	20 31 14.85	21.675	23 46 23.7	62.55
23	18 47 35.01	22.219	S. 26 24 20.4	03.69	23	20 33 24.83	21.652	S. 23 40 04.9	63.72
Friday 14.					Sunday 16.				
00	18 49 48.34	22.223	S. 26 23 54.4	04.98	00	20 35 34.67	21.628	S. 23 33 39.1	64.88
01	18 52 01.68	22.225	26 23 20.7	06.27	01	20 37 44.37	21.604	23 27 06.4	66.03
02	18 54 15.04	22.228	26 22 39.2	07.57	02	20 39 53.92	21.579	23 20 26.7	67.18
03	18 56 28.41	22.228	26 21 49.9	08.86	03	20 42 03.32	21.554	23 13 40.2	68.32
04	18 58 41.78	22.228	26 20 52.9	10.14	04	20 44 12.57	21.529	23 06 46.9	69.46
05	19 00 55.15	22.228	26 19 48.2	11.43	05	20 46 21.67	21.504	22 59 46.7	70.60
06	19 03 08.51	22.227	26 18 35.7	12.73	06	20 48 30.62	21.478	22 52 39.7	71.73
07	19 05 21.87	22.226	26 17 15.4	14.02	07	20 50 39.41	21.453	22 45 26.0	72.84
08	19 07 35.22	22.223	26 15 47.5	15.30	08	20 52 48.05	21.428	22 38 05.6	73.96
09	19 09 48.55	22.220	26 14 11.8	16.60	09	20 54 56.54	21.402	22 30 38.5	75.07
10	19 12 01.86	22.217	26 12 28.3	17.88	10	20 57 04.87	21.375	22 23 04.8	76.17
11	19 14 15.15	22.212	26 10 37.2	19.17	11	20 59 13.04	21.348	22 15 24.5	77.27
12	19 16 28.40	22.206	26 08 38.3	20.46	12	21 01 21.05	21.322	22 07 37.6	78.36
13	19 18 41.62	22.201	26 06 31.7	21.74	13	21 03 28.90	21.295	21 59 44.2	79.44
14	19 20 54.81	22.194	26 04 17.4	23.03	14	21 05 36.59	21.269	21 51 44.3	80.52
15	19 23 07.95	22.186	26 01 55.4	24.30	15	21 07 44.13	21.243	21 43 38.0	81.59
16	19 25 21.04	22.178	25 59 25.8	25.58	16	21 09 51.50	21.215	21 35 25.2	82.66
17	19 27 34.09	22.170	25 56 48.4	26.87	17	21 11 58.71	21.188	21 27 06.1	83.72
18	19 29 47.08	22.161	25 54 03.4	28.13	18	21 14 05.76	21.161	21 18 40.6	84.77
19	19 32 00.02	22.151	25 51 10.8	29.41	19	21 16 12.64	21.134	21 10 08.9	85.81
20	19 34 12.89	22.140	25 48 10.5	30.68	20	21 18 19.37	21.108	21 01 30.9	86.85
21	19 36 25.70	22.129	25 45 02.6	31.95	21	21 20 25.93	21.081	20 52 46.7	87.88
22	19 38 38.44	22.118	25 41 47.1	33.22	22	21 22 32.34	21.054	20 43 56.3	88.91
23	19 40 51.11	22.105	25 38 24.0	34.48	23	21 24 38.58	21.026	20 34 59.8	89.93
24	19 43 03.70	22.092	S. 25 34 53.3	35.74	24	21 26 44.65	20.999	S. 20 25 57.2	90.94

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Monday 17.					Wednesday 19.				
00	21 26 44.65	20.999 S.	20 25 57.2	90.94	00	23 04 50.69	20.013 S.	11 26 36.0	130.89
01	21 28 56.57	20.973	20 16 48.5	91.94	01	23 06 50.74	20.003	11 13 28.7	131.54
02	21 30 56.33	20.946	20 07 33.9	92.93	02	23 08 50.73	19.993	11 00 17.5	132.18
03	21 33 01.92	20.919	19 58 13.3	93.93	03	23 10 50.66	19.985	10 47 02.6	132.80
04	21 35 07.36	20.893	19 48 46.7	94.92	04	23 12 50.55	19.978	10 33 43.9	133.42
05	21 37 12.65	20.866	19 39 14.3	95.89	05	23 14 50.40	19.971	10 20 21.6	134.03
06	21 39 17.75	20.840	19 29 36.0	96.87	06	23 16 50.20	19.964	10 06 55.6	134.63
07	21 41 22.71	20.814	19 19 51.9	97.83	07	23 18 49.97	19.958	9 53 26.0	135.23
08	21 43 27.52	20.788	19 10 02.0	98.78	08	23 20 49.70	19.953	9 39 52.9	135.80
09	21 45 32.17	20.762	19 00 06.5	99.71	09	23 22 49.40	19.948	9 26 16.4	136.38
10	21 47 36.66	20.736	18 50 05.3	100.68	10	23 24 49.07	19.944	9 12 36.3	136.96
11	21 49 41.00	20.711	18 39 58.4	101.61	11	23 26 48.73	19.941	8 58 52.9	137.51
12	21 51 45.19	20.686	18 29 46.0	102.53	12	23 28 48.36	19.938	8 45 06.2	138.06
13	21 53 49.25	20.660	18 19 28.0	103.46	13	23 30 47.98	19.937	8 31 16.2	138.60
14	21 55 53.11	20.635	18 09 04.5	104.37	14	23 32 47.60	19.935	8 17 23.0	139.13
15	21 57 56.85	20.612	17 58 35.6	105.27	15	23 34 47.20	19.934	8 03 26.6	139.67
16	22 00 00.45	20.587	17 48 01.3	106.17	16	23 36 46.81	19.935	7 49 27.0	140.18
17	22 02 03.89	20.563	17 37 21.6	107.06	17	23 38 46.42	19.936	7 35 24.4	140.69
18	22 04 07.20	20.539	17 26 36.6	107.94	18	23 40 46.04	19.938	7 21 18.7	141.19
19	22 06 10.36	20.516	17 15 46.3	108.83	19	23 42 45.67	19.940	7 07 10.1	141.68
20	22 08 13.59	20.493	17 04 50.7	109.60	20	23 44 45.32	19.943	6 52 58.6	142.16
21	22 10 16.27	20.469	16 53 50.0	110.55	21	23 46 44.99	19.947	6 38 44.2	142.63
22	22 12 19.02	20.448	16 42 44.1	111.41	22	23 48 44.68	19.951	6 24 27.0	143.09
23	22 14 21.64	20.425 S.	16 31 33.1	112.25	23	23 50 44.40	19.957 S.	6 10 07.1	143.54
Tuesday 18.					Thursday 20.				
00	22 16 24.12	20.403 S.	16 20 17.1	113.08	00	23 52 44.16	19.963 S.	5 55 44.5	143.99
01	22 18 26.47	20.382	16 08 56.1	113.92	01	23 54 43.95	19.969	5 41 19.2	144.43
02	22 20 28.00	20.361	15 57 30.1	114.74	02	23 56 43.79	19.977	5 26 51.4	144.84
03	22 22 30.80	20.340	15 45 59.2	115.56	03	23 58 43.67	19.985	5 12 21.1	145.27
04	22 24 32.78	20.320	15 34 23.4	116.37	04	00 00 43.61	19.995	4 57 48.2	145.68
05	22 26 34.64	20.300	15 22 42.8	117.17	05	00 02 43.61	20.005	4 43 13.0	146.07
06	22 28 36.38	20.280	15 10 57.4	117.96	06	00 04 43.67	20.015	4 28 35.4	146.46
07	22 30 38.00	20.261	14 59 07.3	118.74	07	00 06 43.70	20.027	4 13 55.5	146.84
08	22 32 39.51	20.241	14 47 12.5	119.53	08	00 08 43.99	20.039	3 59 13.3	147.21
09	22 34 40.91	20.225	14 35 13.0	120.30	09	00 10 44.26	20.053	3 44 29.0	147.57
10	22 36 42.21	20.207	14 23 08.9	121.06	10	00 12 44.62	20.067	3 29 42.5	147.92
11	22 38 43.39	20.189	14 11 00.5	121.81	11	00 14 45.06	20.081	3 14 54.0	148.25
12	22 40 44.48	20.171	13 58 47.2	122.55	12	00 16 45.59	20.097	3 00 03.5	148.58
13	22 42 45.47	20.157	13 46 29.7	123.20	13	00 18 46.22	20.113	2 45 11.0	148.90
14	22 44 46.36	20.141	13 34 07.7	124.01	14	00 20 46.95	20.130	2 30 16.7	149.21
15	22 46 47.16	20.126	13 21 41.4	124.75	15	00 22 47.78	20.148	2 15 20.5	149.51
16	22 48 47.87	20.111	13 09 10.7	125.47	16	00 24 48.73	20.168	2 00 22.6	149.79
17	22 50 48.49	20.097	12 56 35.8	126.17	17	00 26 49.79	20.187	1 45 23.0	150.07
18	22 52 49.03	20.083	12 43 56.7	126.87	18	00 28 50.97	20.207	1 30 21.8	150.33
19	22 54 49.49	20.070	12 31 13.4	127.57	19	00 30 52.27	20.228	1 15 19.0	150.59
20	22 56 49.87	20.058	12 18 25.9	128.25	20	00 32 53.71	20.252	1 00 14.7	150.83
21	22 58 50.18	20.045	12 05 34.4	128.92	21	00 34 55.29	20.274	0 45 09.0	151.07
22	23 00 50.41	20.033	11 52 38.9	129.58	22	00 36 57.00	20.298	0 30 01.9	151.29
23	23 02 50.58	20.023	11 39 39.4	130.24	23	00 38 58.87	20.323 S.	0 14 53.5	151.50
24	23 04 50.69	20.013 S.	11 26 36.0	130.89	24	00 41 00.88	20.348 N.	0 00 16.1	151.70

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Friday 21.					Sunday 23.				
	h m s		° ' "			h m s		° ' "	
00	00 41 00.88	20.348	N. 0 00 16.1	151.70	00	02 23 20.12	22.620	N. 12 06 50.3	145.34
01	00 43 03.05	20.376	0 15 26.9	151.89	01	02 25 36.04	22.688	12 21 20.8	144.82
02	00 45 05.39	20.403	0 30 38.8	152.07	02	02 27 52.38	22.758	12 35 48.1	144.27
03	00 47 07.89	20.431	0 45 51.7	152.23	03	02 30 09.13	22.826	12 50 12.0	143.70
04	00 49 10.56	20.461	1 01 05.6	152.39	04	02 32 26.29	22.896	13 04 32.5	143.13
05	00 51 13.42	20.491	1 16 20.4	152.53	05	02 34 43.88	22.968	13 18 49.5	142.52
06	00 53 16.45	20.522	1 31 35.9	152.65	06	02 37 01.90	23.038	13 33 02.7	141.88
07	00 55 19.68	20.554	1 46 52.2	152.78	07	02 39 20.34	23.109	13 47 12.1	141.24
08	00 57 23.10	20.586	2 02 09.2	152.88	08	02 41 39.21	23.183	14 01 17.6	140.58
09	00 59 26.71	20.619	2 17 26.8	152.98	09	02 43 58.53	23.256	14 15 19.0	139.89
10	01 01 30.53	20.654	2 32 44.9	153.06	10	02 46 18.28	23.329	14 29 16.3	139.18
11	01 03 34.56	20.690	2 48 03.5	153.13	11	02 48 38.48	23.403	14 43 09.2	138.46
12	01 05 38.81	20.727	3 03 22.4	153.18	12	02 50 59.12	23.478	14 56 57.8	137.73
13	01 07 43.28	20.763	3 18 41.6	153.22	13	02 53 20.21	23.553	15 10 41.9	136.96
14	01 09 47.97	20.802	3 34 01.0	153.25	14	02 55 41.76	23.630	15 24 21.3	136.17
15	01 11 52.90	20.841	3 49 20.6	153.27	15	02 58 03.77	23.706	15 37 55.9	135.36
16	01 13 58.06	20.880	4 04 40.2	153.27	16	03 00 26.23	23.783	15 51 25.6	134.53
17	01 16 03.46	20.921	4 19 59.8	153.26	17	03 02 49.16	23.860	16 04 50.3	133.68
18	01 18 09.11	20.963	4 35 19.3	153.23	18	03 05 12.55	23.938	16 18 09.8	132.81
19	01 20 15.02	21.006	4 50 38.5	153.18	19	03 07 36.41	24.016	16 31 24.0	131.92
20	01 22 21.18	21.049	5 05 57.5	153.14	20	03 10 00.74	24.093	16 44 32.8	131.01
21	01 24 27.61	21.094	5 21 16.2	153.08	21	03 12 25.53	24.173	16 57 36.1	130.08
22	01 26 34.31	21.139	5 36 34.4	152.99	22	03 14 50.81	24.253	17 10 33.7	129.12
23	01 28 41.28	21.185	N. 5 51 52.1	152.89	23	03 17 16.56	24.331	N. 17 23 25.5	128.14
Saturday 22.					Monday 24.				
	h m s		° ' "			h m s		° ' "	
00	01 30 48.53	21.233	N. 6 07 09.1	152.78	00	03 19 42.78	24.410	N. 17 36 11.4	127.15
01	01 32 56.07	21.280	6 22 25.4	152.66	01	03 22 09.48	24.490	17 48 51.3	126.13
02	01 35 03.89	21.328	6 37 41.0	152.53	02	03 24 36.66	24.570	18 01 24.9	125.08
03	01 37 12.01	21.379	6 52 55.7	152.37	03	03 27 04.32	24.650	18 13 52.3	124.02
04	01 39 20.44	21.430	7 08 09.4	152.19	04	03 29 32.46	24.731	18 26 13.2	122.93
05	01 41 29.17	21.481	7 23 22.0	152.01	05	03 32 01.09	24.812	18 38 27.5	121.82
06	01 43 38.21	21.533	7 38 33.5	151.82	06	03 34 30.20	24.891	18 50 35.0	120.68
07	01 45 47.57	21.587	7 53 43.8	151.59	07	03 36 59.78	24.971	19 02 35.7	119.54
08	01 47 57.25	21.641	8 08 52.6	151.36	08	03 39 29.85	25.053	19 14 29.5	118.37
09	01 50 07.26	21.697	8 24 00.1	151.11	09	03 42 00.41	25.133	19 26 16.1	117.17
10	01 52 17.61	21.753	8 39 05.9	150.84	10	03 44 31.44	25.212	19 37 55.5	115.95
11	01 54 28.29	21.808	8 54 10.2	150.57	11	03 47 02.95	25.293	19 49 27.5	114.71
12	01 56 39.31	21.866	9 09 12.7	150.27	12	03 49 34.95	25.373	20 00 52.0	113.45
13	01 58 50.68	21.924	9 24 13.4	149.95	13	03 52 07.42	25.452	20 12 08.9	112.17
14	02 01 02.40	21.983	9 39 12.1	149.63	14	03 54 40.37	25.532	20 23 18.0	110.86
15	02 03 14.48	22.043	9 54 08.9	149.28	15	03 57 13.80	25.612	20 34 19.2	109.53
16	02 05 26.92	22.105	10 09 03.5	148.91	16	03 59 47.71	25.691	20 45 12.3	108.18
17	02 07 39.74	22.167	10 23 55.8	148.53	17	04 02 22.09	25.768	20 55 57.3	106.81
18	02 09 52.92	22.228	10 38 45.8	148.13	18	04 04 56.93	25.846	21 06 34.0	105.42
19	02 12 06.48	22.292	10 53 33.3	147.71	19	04 07 32.24	25.924	21 17 02.3	104.00
20	02 14 20.43	22.357	11 08 18.3	147.28	20	04 10 08.02	26.002	21 27 22.0	102.57
21	02 16 34.76	22.421	11 23 00.6	146.82	21	04 12 44.26	26.078	21 37 33.1	101.11
22	02 18 49.48	22.487	11 37 40.1	146.34	22	04 15 20.95	26.153	21 47 35.3	99.63
23	02 21 04.60	22.553	11 52 16.7	145.85	23	04 17 58.10	26.229	21 57 28.6	98.13
24	02 23 20.12	22.620	N. 12 06 50.3	145.34	24	04 20 35.70	26.303	N. 22 07 12.9	96.62

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Tuesday 25.					Thursday 27.				
	h m s	s	° ' " "	"		h m s	s	° ' " "	"
00	04 20 35.70	26.303	N. 22 07 12.9	96.62	00	06 33 04.94	28.232	N. 26 23 30.5	05.61
01	04 23 13.74	26.378	22 16 48.0	95.08	01	06 35 54.31	28.224	26 23 57.9	03.53
02	04 25 52.23	26.452	22 26 13.8	93.51	02	06 38 43.63	28.214	26 24 12.8	01.44
03	04 28 31.16	26.524	22 35 30.1	91.93	03	06 41 32.88	28.201	26 24 15.2	00.63
04	04 31 10.52	26.595	22 44 36.9	90.33	04	06 44 22.04	28.186	26 24 05.2	02.71
05	04 33 50.30	26.665	22 53 34.1	88.72	05	06 47 11.11	28.169	26 23 42.7	04.78
06	04 36 30.50	26.735	23 02 21.5	87.07	06	06 50 00.07	28.149	26 23 07.8	06.84
07	04 39 11.12	26.803	23 10 58.9	85.41	07	06 52 48.90	28.128	26 22 20.6	08.90
08	04 41 52.14	26.871	23 19 26.4	83.74	08	06 55 37.60	28.104	26 21 21.0	10.96
09	04 44 33.57	26.938	23 27 43.8	82.04	09	06 58 26.15	28.078	26 20 09.1	13.00
10	04 47 15.39	27.003	23 35 50.9	80.32	10	07 01 14.54	28.051	26 18 45.0	15.05
11	04 49 57.60	27.067	23 43 47.6	78.58	11	07 04 02.76	28.021	26 17 08.5	17.09
12	04 52 40.19	27.130	23 51 33.9	76.84	12	07 06 50.79	27.988	26 15 19.9	19.12
13	04 55 23.16	27.192	23 59 09.7	75.07	13	07 09 38.62	27.953	26 13 19.1	21.14
14	04 58 06.49	27.252	24 06 34.7	73.28	14	07 12 26.23	27.917	26 11 06.2	23.15
15	05 00 50.18	27.311	24 13 49.0	71.48	15	07 15 13.62	27.878	26 08 41.3	25.16
16	05 03 34.22	27.368	24 20 52.4	69.66	16	07 18 00.77	27.838	26 06 04.3	27.15
17	05 06 18.60	27.424	24 27 44.9	67.83	17	07 20 47.67	27.795	26 03 15.5	29.13
18	05 09 03.31	27.478	24 34 26.3	65.97	18	07 23 34.31	27.751	26 00 14.8	31.10
19	05 11 48.24	27.531	24 40 56.5	64.10	19	07 26 20.68	27.704	25 57 02.3	33.05
20	05 14 33.68	27.582	24 47 15.5	62.23	20	07 29 06.76	27.656	25 53 38.2	35.00
21	05 17 19.32	27.631	24 53 23.2	60.33	21	07 31 52.55	27.607	25 50 02.3	36.94
22	05 20 05.25	27.679	24 59 19.5	58.43	22	07 34 38.04	27.555	25 46 14.9	38.86
23	05 22 51.47	27.727	N. 25 05 04.3	56.50	23	07 37 23.21	27.501	N. 25 42 16.0	40.78
Wednesday 26.					Friday 28.				
00	05 25 37.97	27.772	N. 25 10 37.5	54.57	00	07 40 08.05	27.445	N. 25 38 05.6	42.68
01	05 28 24.73	27.814	25 15 59.1	52.62	01	07 42 52.55	27.388	25 33 43.9	44.55
02	05 31 11.74	27.854	25 21 08.9	50.65	02	07 45 36.71	27.330	25 29 11.0	46.42
03	05 33 58.98	27.893	25 26 06.9	48.68	03	07 48 20.51	27.269	25 24 26.9	48.28
04	05 36 46.46	27.931	25 30 53.1	46.70	04	07 51 03.94	27.207	25 19 31.7	50.12
05	05 39 34.15	27.966	25 35 27.3	44.70	05	07 53 46.99	27.143	25 14 25.5	51.93
06	05 42 22.05	27.999	25 39 49.5	42.70	06	07 56 29.66	27.079	25 09 08.5	53.73
07	05 45 10.14	28.030	25 43 59.7	40.69	07	07 59 11.94	27.013	25 03 40.7	55.53
08	05 47 58.41	28.058	25 47 57.8	38.68	08	08 01 53.82	26.946	24 58 02.2	57.30
09	05 50 46.84	28.086	25 51 43.8	36.65	09	08 04 35.29	26.877	24 52 13.1	59.05
10	05 53 35.44	28.112	25 55 17.6	34.61	10	08 07 16.34	26.806	24 46 13.6	60.79
11	05 56 24.18	28.134	25 58 39.1	32.56	11	08 09 56.96	26.733	24 40 03.6	62.53
12	05 59 13.05	28.155	26 01 48.3	30.51	12	08 12 37.14	26.661	24 33 43.3	64.23
13	06 02 02.04	28.174	26 04 45.2	28.45	13	08 15 16.89	26.588	24 27 12.9	65.90
14	06 04 51.14	28.190	26 07 29.7	26.38	14	08 17 56.19	26.512	24 20 32.5	67.57
15	06 07 40.32	28.204	26 10 01.8	24.32	15	08 20 35.03	26.435	24 13 42.1	69.23
16	06 10 29.59	28.217	26 12 21.5	22.25	16	08 23 13.41	26.358	24 06 41.8	70.85
17	06 13 18.92	28.226	26 14 28.8	20.18	17	08 25 51.33	26.280	23 59 31.9	72.46
18	06 16 08.30	28.233	26 16 23.6	18.10	18	08 28 28.77	26.201	23 52 12.3	74.05
19	06 18 57.72	28.239	26 18 06.0	16.03	19	08 31 05.74	26.122	23 44 43.3	75.63
20	06 21 47.17	28.243	26 19 35.9	13.94	20	08 33 42.23	26.041	23 37 04.8	77.18
21	06 24 36.63	28.243	26 20 53.3	11.86	21	08 36 18.23	25.959	23 29 17.1	78.71
22	06 27 26.08	28.242	26 21 58.2	09.78	22	08 38 53.74	25.878	23 21 20.3	80.22
23	06 30 15.53	28.238	26 22 50.6	07.69	23	08 41 28.76	25.794	23 13 14.5	81.72
24	06 33 04.94	28.232	N. 26 23 30.5	05.61	24	08 44 03.27	25.710	N. 23 04 59.7	83.19

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
Saturday 29.					Monday 31.				
	h m s	s	° ' " "			h m s	s	° ' " "	
00	08 44 03.27	25.710	N. 23 04 59.7	83.19	00	10 37 31.90	21.665	N. 14 14 28.0	130.40
01	08 46 37.28	25.626	22 56 36.2	84.64	01	10 39 41.67	21.591	14 01 24.0	130.93
02	08 49 10.78	25.541	22 48 04.0	86.08	02	10 41 50.99	21.518	13 48 16.8	131.46
03	08 51 43.77	25.455	22 39 23.3	87.49	03	10 43 59.89	21.447	13 35 06.5	131.96
04	08 54 16.24	25.369	22 30 34.1	88.88	04	10 46 08.35	21.376	13 21 53.3	132.43
05	08 56 48.20	25.283	22 21 36.7	90.25	05	10 48 16.40	21.306	13 08 37.3	132.91
06	08 59 19.64	25.197	22 12 31.1	91.60	06	10 50 24.02	21.236	12 55 18.4	133.37
07	09 01 50.56	25.110	22 03 17.5	92.93	07	10 52 31.23	21.167	12 41 56.9	133.81
08	09 04 20.96	25.023	21 53 56.0	94.23	08	10 54 38.02	21.098	12 28 32.7	134.24
09	09 06 50.84	24.936	21 44 26.7	95.53	09	10 56 44.41	21.032	12 15 06.0	134.64
10	09 09 20.19	24.848	21 34 49.7	96.80	10	10 58 50.40	20.966	12 01 37.0	135.03
11	09 11 49.01	24.759	21 25 05.1	98.05	11	11 00 56.00	20.900	11 48 05.6	135.42
12	09 14 17.30	24.671	21 15 13.1	99.28	12	11 03 01.20	20.835	11 34 31.9	135.79
13	09 16 45.06	24.583	21 05 13.8	100.48	13	11 05 06.02	20.772	11 20 56.1	136.14
14	09 19 12.30	24.495	20 55 07.4	101.66	14	11 07 10.46	20.708	11 07 18.2	136.48
15	09 21 39.00	24.406	20 44 53.9	102.83	15	11 09 14.52	20.647	10 53 38.3	136.82
16	09 24 05.17	24.318	20 34 33.5	103.98	16	11 11 18.22	20.586	10 39 56.4	137.13
17	09 26 30.82	24.230	20 24 06.2	105.10	17	11 13 21.55	20.524	10 26 12.8	137.43
18	09 28 55.93	24.142	20 13 32.3	106.20	18	11 15 24.51	20.465	10 12 27.3	137.72
19	09 31 20.52	24.054	20 02 51.8	107.28	19	11 17 27.13	20.407	9 58 40.2	137.98
20	09 33 44.58	23.966	19 52 04.9	108.35	20	11 19 29.39	20.348	9 44 51.5	138.25
21	09 36 08.11	23.878	19 41 11.6	109.40	21	11 21 31.31	20.292	9 31 01.2	138.50
22	09 38 31.12	23.791	19 30 12.1	110.42	22	11 23 32.89	20.235	9 17 09.5	138.73
23	09 40 53.60	23.703	N. 19 19 06.6	111.42	23	11 25 34.13	20.180	N. 9 03 16.4	138.96
Sunday 30.					Tuesday, JAN. 1, 1929.				
00	09 43 15.55	23.616	N. 19 07 55.1	112.40	00	11 27 35.05	20.126	N. 8 49 22.0	139.17
01	09 45 36.99	23.529	18 56 37.8	113.37					
02	09 47 57.90	23.443	18 45 14.7	114.31					
03	09 50 18.30	23.357	18 33 46.1	115.23					
04	09 52 38.18	23.270	18 22 11.9	116.14					
05	09 54 57.54	23.185	18 10 32.4	117.03					
06	09 57 16.40	23.100	17 58 47.6	117.89					
07	09 59 34.74	23.015	17 46 57.7	118.74					
08	10 01 52.58	22.932	17 35 02.7	119.57					
09	10 04 09.92	22.848	17 23 02.9	120.38					
10	10 06 26.76	22.765	17 10 58.2	121.18					
11	10 08 43.10	22.682	16 58 48.8	121.95					
12	10 10 58.94	22.600	16 46 34.8	122.71					
13	10 13 14.30	22.519	16 34 16.3	123.44					
14	10 15 29.17	22.438	16 21 53.5	124.16					
15	10 17 43.55	22.358	16 09 26.4	124.86					
16	10 19 57.46	22.278	15 56 55.2	125.54					
17	10 22 10.89	22.198	15 44 19.9	126.21					
18	10 24 23.84	22.120	15 31 40.7	126.86					
19	10 26 36.33	22.043	15 18 57.6	127.50					
20	10 28 48.36	21.966	15 06 10.7	128.11					
21	10 30 59.92	21.889	14 53 20.3	128.70					
22	10 33 11.03	21.814	14 40 26.3	129.29					
23	10 35 21.69	21.739	14 27 28.8	129.86					
24	10 37 31.90	21.665	N. 14 14 28.0	130.40					

PHASES OF THE MOON.			
		h	m
Dec. 4	(Last Quarter	..	02 31.5
" 12	☉ New Moon	..	05 06.1
" 20	) First Quarter	..	03 43.4
" 26	○ Full Moon	..	19 54.8

		h	
Dec. 11	(Apogee	..	09.3
" 26	(Perigee	..	02.5

MERCURY, 1928.

MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Semid. passg. Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.			Meridian Passage.	Heliocentric Longitude.			Heliocentric Latitude.			Log. of Rad. Vect.		
	Noon.				Noon.					Noon.				Noon.			Noon.			Noon.		
	h	m	s		°	'	"						h	m	s	°	'	"				
Jan. 1	18	23	45.93	0.17	S. 24	44	58.2	2.32	06.12	0.1577719	11	44.1	265	58	08.5	S. 4	22	20.0	9.6673790			
2	18	30	45.69	0.17	24	45	13.7	2.32	06.11	.1580577	11	47.2	268	44	53.9	4	37	57.2	.6663205			
3	18	37	46.81	0.17	24	44	04.9	2.32	06.11	.1581758	11	50.3	271	32	41.5	4	53	00.3	.6650005			
4	18	44	49.18	0.17	24	41	30.6	2.32	06.11	.1581258	11	53.4	274	21	44.0	5	07	27.2	.6634180			
5	18	51	52.70	0.17	24	37	29.8	2.32	06.12	.1579055	11	56.5	277	12	14.5	5	21	16.1	.6615721			
6	18	58	57.25	0.17	24	32	01.6	2.32	06.12	.1575129	11	59.6	280	04	26.1	5	34	24.7	.6594615			
7	19	06	02.71	0.17	S. 24	25	04.9	2.33	06.13	0.1569452	12	02.8	282	58	32.7	S. 5	46	50.7	9.6570856			
8	19	13	08.98	0.17	24	16	38.9	2.33	06.14	.1561992	12	06.0	285	54	48.2	5	58	31.4	.6544435			
9	19	20	15.92	0.17	24	06	42.5	2.34	06.15	.1552704	12	09.1	288	53	27.1	6	09	23.8	.6515339			
10	19	27	23.40	0.17	23	55	15.4	2.34	06.17	.1541540	12	12.3	291	54	44.4	6	19	24.8	.6483564			
11	19	34	31.28	0.17	23	42	16.3	2.35	06.19	.1528446	12	15.5	294	58	15.7	6	28	30.7	.6449101			
12	19	41	39.42	0.17	23	27	44.8	2.36	06.21	.1513355	12	18.7	298	06	17.2	6	36	37.7	.6411949			
13	19	48	47.61	0.17	S. 23	11	40.2	2.37	06.23	0.1496200	12	21.9	301	17	05.5	S. 6	43	41.3	9.6372115			
14	19	55	55.78	0.17	22	54	02.2	2.38	06.26	.1476895	12	25.1	304	31	38.3	6	49	37.0	.6329600			
15	20	03	03.67	0.17	22	34	50.2	2.39	06.29	.1455353	12	28.3	307	50	13.6	6	54	19.6	.6284425			
16	20	10	11.09	0.17	22	14	04.1	2.40	06.33	.1432475	12	31.5	311	13	10.3	6	57	42.5	.6236614			
17	20	17	17.83	0.17	21	51	43.7	2.42	06.37	.1405148	12	34.7	314	40	47.9	6	59	43.5	.6186206			
18	20	24	23.65	0.17	21	27	49.3	2.43	06.41	.1376252	12	37.9	318	13	26.8	7	00	10.1	.6133252			
19	20	31	28.30	0.18	S. 21	02	21.0	2.45	06.46	0.1344654	12	41.0	321	51	27.8	S. 6	58	59.4	9.6077823			
20	20	38	31.46	0.18	20	35	19.5	2.47	06.51	.1310210	12	44.1	325	35	12.5	6	56	02.7	.6020011			
21	20	45	32.81	0.18	20	06	45.7	2.49	06.56	.1272759	12	47.2	329	25	02.9	6	51	12.1	.5959935			
22	20	52	31.96	0.18	19	36	40.7	2.51	06.62	.1232135	12	50.2	333	21	21.5	6	44	19.4	.5897742			
23	20	59	28.55	0.18	19	05	06.3	2.54	06.69	.1188153	12	53.2	337	24	30.6	6	35	16.0	.5833614			
24	21	06	22.02	0.18	18	32	04.7	2.57	06.77	.1140612	12	56.2	341	34	52.9	6	23	53.2	.5767774			
25	21	13	11.86	0.18	S. 17	57	38.6	2.60	06.85	0.1089309	12	59.1	345	52	50.2	S. 6	10	02.5	9.5700497			
26	21	19	57.41	0.18	17	21	51.4	2.64	06.94	.1034023	13	01.9	350	18	43.6	5	53	35.6	.5632107			
27	21	26	37.97	0.19	16	44	47.6	2.67	07.03	.0974524	13	04.6	354	52	53.0	5	34	25.1	.5562988			
28	21	33	12.71	0.19	16	06	32.2	2.71	07.14	.0910578	13	07.3	359	35	36.0	5	12	24.5	.5493591			
29	21	39	40.68	0.19	15	27	11.7	2.75	07.25	.0841947	13	09.8	4	27	07.6	4	47	29.2	.5424430			
30	21	46	00.80	0.19	14	46	53.6	2.80	07.38	.0768398	13	12.2	9	27	39.1	4	19	36.6	.5356102			
31	21	52	11.85	0.20	S. 14	05	46.7	2.85	07.51	0.0689702	13	14.4	14	37	17.0	S. 3	48	47.1	9.5289267			
Feb. 1	21	58	12.44	0.20	13	24	01.7	2.91	07.65	.0605653	13	16.5	19	56	02.5	3	15	05.0	.5224661			
2	22	04	01.02	0.20	12	41	50.7	2.97	07.81	.0516072	13	18.3	25	23	49.7	2	38	38.7	.5163080			
3	22	09	35.84	0.21	11	59	27.9	3.03	07.98	.0420824	13	19.9	31	00	24.7	1	59	41.8	.5105367			
4	22	14	55.02	0.21	11	17	09.0	3.10	08.17	.0319825	13	21.3	36	45	25.0	1	18	33.3	.5052398			
5	22	19	56.45	0.21	10	35	12.2	3.18	08.38	.0213072	13	22.4	42	38	17.8	S. 0	35	38.1	.5005047			
6	22	24	37.89	0.22	S. 9	53	57.2	3.27	08.60	0.0100647	13	23.1	48	38	20.1	N. 0	08	32.9	9.4964166			
7	22	28	56.99	0.22	9	13	46.0	3.36	08.84	.99982750	13	23.5	54	44	38.2	0	53	24.0	.4930540			
8	22	32	51.29	0.23	8	35	01.8	3.45	09.09	.9859706	13	23.4	60	56	08.0	1	38	14.9	.4904851			
9	22	36	18.29	0.24	7	58	09.6	3.55	09.36	.9731995	13	22.9	67	11	36.0	2	22	22.6	.4887650			
10	22	39	15.55	0.25	7	23	35.0	3.66	09.65	.9600258	13	21.9	73	29	40.8	3	05	03.1	.4879313			
11	22	41	40.76	0.25	6	51	44.0	3.78	09.95	.9465316	13	20.3	79	48	55.0	3	45	33.8	.4880031			
12	22	43	31.81	0.26	S. 6	23	02.7	3.90	10.27	.9328172	13	18.2	86	07	48.2	N. 4	23	14.9	9.4889783			
13	22	44	46.95	0.27	5	57	55.8	4.03	10.60	.9190019	13	15.5	92	24	49.7	4	57	31.9	.4908354			
14	22	45	24.89	0.28	5	36	46.2	4.16	10.95	.9052217	13	12.1	98	38	31.3	5	27	57.1	.4935334			
15	22	45	24.90	0.29	5	19	54.2	4.29	11.29	.8916290	13	08.2	104	47	30.5	5	54	10.2	.4970155			
16	22	44	46.97	0.30	S. 5	07	36.2	4.42	11.64	.8783894	13	03.6	110	50	32.4	N. 6	15	58.9	9.5012110			

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MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Semid. passr. Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.			Meridian Passage.	Heliocentric Longitude.			Heliocentric Latitude.			Log. of Rad. Vect.			
	Noon.				Noon.					Noon.				Noon.			Noon.			Noon.			
	h	m	s	s	°	'	"	"	"		h	m	s	°	'	"	°	'	"		°	'	"
Feb. 16	22	44	46.97	0.30	S.	5	07	36.2	4.42	11.64	9.8783894	13	03.6	110	50	32.4	N.	6	15	58.9	9.5012110		
17	22	43	31.86	0.31		5	00	03.7	4.55	11.99	.8656761	12	58.4	116	46	32.5		6	33	18.7	.5060401		
18	22	41	41.26	0.32		4	57	22.4	4.68	12.33	.8536670	12	52.6	122	34	36.8		6	46	12.2	.5114182		
19	22	39	17.75	0.32		4	59	31.6	4.80	12.65	.8425366	12	46.3	128	14	03.2		6	54	47.9	.5172563		
20	22	36	24.82	0.33		5	06	23.5	4.91	12.94	.8324496	12	39.5	133	44	20.8		6	59	19.1	.5234675		
21	22	33	06.86	0.33		5	17	42.7	5.01	13.21	.8235528	12	32.3	139	05	09.7		7	00	02.4	.5299683		
22	22	29	28.96	0.34	S.	5	33	06.6	5.10	13.44	9.8159684	12	24.7	144	16	20.0	N.	6	57	17.0	9.5366801		
23	22	25	36.78	0.34		5	52	06.4	5.18	13.64	.8097872	12	16.9	149	17	50.2		6	51	23.0	.5435305		
24	22	21	36.27	0.35		6	14	08.3	5.24	13.79	.8050653	12	09.0	154	09	46.4		6	42	40.9	.5504540		
25	22	17	33.47	0.35		6	38	34.6	5.27	13.89	.8018208	12	01.1	158	52	20.4		6	31	30.7	.5573926		
26	22	13	34.22	0.36		7	04	46.0	5.29	13.95	.8000344	11	53.2	163	25	48.9		6	18	11.7	.5642960		
27	22	09	43.96	0.36		7	32	03.1	5.30	13.96	.7996538	11	45.5	167	50	32.0		6	03	01.9	.5711197		
28	22	06	07.49	0.36	S.	7	59	48.6	5.29	13.93	9.8005974	11	38.0	172	06	52.6	N.	5	46	17.8	9.5778267		
29	22	02	48.88	0.35		8	27	28.4	5.26	13.86	.8027608	11	30.8	176	15	15.0		5	28	14.3	.5843851		
Mar. 1	21	59	51.40	0.35		8	54	32.0	5.22	13.75	.8060244	11	23.9	180	16	04.7		5	09	05.1	.5907689		
2	21	57	17.54	0.35		9	20	34.0	5.17	13.62	.8102609	11	17.4	184	09	47.7		4	49	02.0	.5969560		
3	21	55	08.97	0.35		9	45	13.3	5.11	13.46	.8153391	11	11.3	187	56	49.6		4	28	15.7	.6029289		
4	21	53	26.70	0.34		10	08	13.5	5.04	13.28	.8211321	11	05.7	191	37	36.2		4	06	55.5	.6086730		
5	21	52	11.12	0.34	S.	10	29	22.2	4.97	13.09	9.8275186	11	00.5	195	12	32.3	N.	3	45	09.5	9.6141773		
6	21	51	22.13	0.33		10	48	30.5	4.89	12.89	.8343864	10	55.7	198	42	02.3		3	23	04.7	.6194330		
7	21	50	59.24	0.33		11	05	32.4	4.81	12.67	.8416346	10	51.4	202	06	29.5		3	00	47.3	.6244331		
8	21	51	01.61	0.32		11	20	24.5	4.73	12.45	.8491727	10	47.5	205	26	16.4		2	38	22.5	.6291727		
9	21	51	28.30	0.32		11	33	05.5	4.64	12.23	.8569229	10	43.9	208	41	44.6		2	15	54.9	.6336185		
10	21	52	18.08	0.31		11	43	35.0	4.56	12.00	.8648169	10	40.8	211	53	14.5		1	53	28.5	.6378577		
11	21	53	29.70	0.31	S.	11	51	54.4	4.48	11.79	9.8727972	10	38.1	215	01	05.9	N.	1	31	06.5	9.6417991		
12	21	55	01.93	0.30		11	58	05.0	4.40	11.58	.8808162	10	35.6	218	05	37.7		1	08	51.9	.6454715		
13	21	56	53.42	0.30		12	02	09.6	4.32	11.37	.8888322	10	33.5	221	07	07.6		0	46	47.3	.6488755		
14	21	59	02.92	0.29		12	04	10.6	4.24	11.16	.8968137	10	31.7	224	05	53.0		0	24	54.8	.6520106		
15	22	01	29.18	0.29		12	04	11.3	4.16	10.96	.9047332	10	30.2	227	02	10.1	N.	0	03	16.4	.6548779		
16	22	04	11.05	0.28		12	02	14.3	4.08	10.76	.9125691	10	29.0	229	56	14.7	S.	0	18	06.3	.6574781		
17	22	07	07.40	0.27	S.	11	58	22.9	4.01	10.57	9.9203047	10	27.9	232	48	22.1	S.	0	39	11.8	9.6598121		
18	22	10	17.21	0.27		11	52	40.1	3.94	10.39	.9279270	10	27.1	235	38	46.7		0	59	58.8	.6618806		
19	22	13	39.49	0.26		11	45	08.7	3.88	10.21	.9354255	10	26.6	238	27	42.6		1	20	25.9	.6636850		
20	22	17	13.34	0.26		11	35	51.8	3.81	10.04	.9427932	10	26.2	241	15	23.5		1	40	32.1	.6652261		
21	22	20	57.93	0.25		11	24	52.0	3.75	09.87	.9500252	10	26.0	244	02	02.7		2	00	16.4	.6665049		
22	22	24	52.49	0.25		11	12	12.0	3.69	09.71	.9571180	10	25.9	246	47	53.1		2	19	37.5	.6675219		
23	22	28	56.32	0.25	S.	10	57	54.3	3.63	09.56	9.9640699	10	26.0	249	33	07.5	S.	2	38	34.6	9.6682780		
24	22	33	08.81	0.24		10	42	01.4	3.57	09.41	.9708800	10	26.3	252	17	58.3		2	57	06.5	.6687736		
25	22	37	29.36	0.24		10	24	35.4	3.52	09.27	.9775487	10	26.7	255	02	37.8		3	15	12.3	.6690092		
26	22	41	57.47	0.23		10	05	38.6	3.47	09.13	.9840773	10	27.2	257	47	18.5		3	32	50.7	.6689845		
27	22	46	32.67	0.23		9	45	13.0	3.42	09.00	.9904665	10	27.8	260	32	12.3		3	50	00.6	.6686999		
28	22	51	14.54	0.23		9	23	20.7	3.37	08.87	.9967186	10	28.6	263	17	31.6		4	06	40.7	.6681552		
29	22	56	02.72	0.22	S.	9	00	03.4	3.32	08.74	0.0028358	10	29.4	266	03	28.7	S.	4	22	49.6	9.6673500		
30	23	00	56.91	0.22		8	35	22.8	3.27	08.62	.0088196	10	30.4	268	50	15.8		4	38	25.8	.6662833		
31	23	05	56.80	0.22		8	09	20.7	3.23	08.51	.0146726	10	31.5	271	38	05.5		4	53	27.7	.6649551		
Apr. 1	23	11	02.16	0.21		7	41	58.9	3.19	08.40	.0203968	10	32.6	274	27	10.6		5	07	53.5	.6633643		
2	23	16	12.78	0.21	S.	7	13	18.7	3.15	08.29	0.0259937	10	33.8	277	17	44.0	S.	5	21	41.2	9.6615101		

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MERCURY, 1928.

MEAN TIME.

Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.	Meridian Passage.	Heliocentric Longitude.	Heliocentric Latitude.	Log. of Rad. Vect.
	Noon.		Noon.			Noon.		Noon.	Noon.	Noon.
	h m s	s	° ' "	"	"		h m	° ' "	° ' "	
Apr. 2	23 16 12.78	0.21	S. 7 13 18.7	3.15	08.29	0.0259937	10 33.8	277 17 44.0	S. 5 21 41.2	9.6615101
3	23 21 28.51	0.21	6 43 21.8	3.11	08.18	0.0314655	10 35.1	280 09 59.1	5 34 48.6	9.6593913
4	23 26 49.19	0.21	6 12 09.5	3.07	08.08	0.0368135	10 36.5	283 04 09.5	5 47 13.2	9.6570072
5	23 32 14.73	0.20	5 39 43.4	3.03	07.98	0.0420385	10 38.0	286 00 29.2	5 58 52.4	9.6543567
6	23 37 45.03	0.20	5 06 04.9	3.00	07.89	0.0471418	10 39.6	288 59 12.8	6 09 43.3	9.6514388
7	23 43 20.07	0.20	4 31 15.4	2.96	07.80	0.0521232	10 41.2	292 00 35.3	6 19 42.6	9.6482529
8	23 48 59.82	0.20	S. 3 55 16.3	2.93	07.72	0.0569828	10 42.9	295 04 52.3	S. 6 28 46.8	9.6447982
9	23 54 44.28	0.19	3 18 09.1	2.90	07.63	0.0617203	10 44.7	298 12 20.0	6 36 51.8	9.6410748
10	00 00 33.48	0.19	2 39 55.0	2.87	07.55	0.0663345	10 46.6	301 23 15.2	6 43 53.5	9.6370828
11	00 06 27.47	0.19	2 00 35.7	2.84	07.47	0.0708231	10 48.6	304 37 55.2	6 49 47.0	9.6328232
12	00 12 26.35	0.19	1 20 12.7	2.81	07.40	0.0751838	10 50.6	307 56 38.4	6 54 27.2	9.6282974
13	00 18 30.20	0.19	S. 0 38 47.5	2.78	07.33	0.0794137	10 52.7	311 19 43.6	6 57 48.5	9.6235081
14	00 24 39.15	0.18	N. 0 03 38.2	2.76	07.26	0.0835085	10 54.9	314 47 30.3	S. 6 59 44.8	9.6184593
15	00 30 53.33	0.18	0 47 02.6	2.73	07.19	0.0874633	10 57.2	318 20 18.9	7 00 09.5	9.6131562
16	00 37 12.92	0.18	1 31 23.8	2.71	07.13	0.0912721	10 59.6	321 58 30.3	6 58 55.5	9.6076058
17	00 43 38.08	0.18	2 16 39.5	2.68	07.07	0.0949283	11 02.1	325 42 26.1	6 55 55.4	9.6018174
18	00 50 09.01	0.18	3 02 47.6	2.66	07.01	0.0984238	11 04.6	329 32 28.3	6 51 01.2	9.5958029
19	00 56 45.91	0.18	3 49 45.4	2.64	06.96	0.1017496	11 07.3	333 28 59.3	6 44 04.5	9.5895773
20	01 03 28.99	0.18	N. 4 37 30.1	2.62	06.91	0.1048950	11 10.1	337 32 21.6	S. 6 34 56.9	9.5831587
21	01 10 18.48	0.17	5 25 58.5	2.60	06.86	0.1078483	11 13.0	341 42 57.7	6 23 29.6	9.5765701
22	01 17 14.60	0.17	6 15 07.0	2.59	06.82	0.1105966	11 16.0	346 01 09.5	6 09 34.2	9.5698385
23	01 24 17.57	0.17	7 04 51.7	2.57	06.78	0.1131252	11 19.1	350 27 18.1	5 53 02.3	9.5629968
24	01 31 27.58	0.17	7 55 07.8	2.56	06.75	0.1154186	11 22.3	355 01 43.3	5 33 46.6	9.5560835
25	01 38 44.84	0.17	8 45 50.4	2.55	06.72	0.1174577	11 25.7	359 44 42.5	5 11 40.6	9.5491438
26	01 46 09.50	0.17	N. 9 36 53.5	2.54	06.69	0.1192252	11 29.1	4 36 30.7	S. 4 46 39.8	9.5422296
27	01 53 41.68	0.17	10 28 10.8	2.53	06.67	0.1207005	11 32.7	9 37 19.1	4 18 41.7	9.5354005
28	02 01 21.45	0.17	11 19 34.9	2.53	06.65	0.1218618	11 36.5	14 47 14.1	3 47 46.8	9.5287231
29	02 09 08.80	0.17	12 10 57.7	2.52	06.64	0.1226875	11 40.3	20 06 16.4	3 13 59.5	9.5222710
30	02 17 03.67	0.17	13 02 10.3	2.52	06.63	0.1231539	11 44.3	25 34 20.1	2 37 28.3	9.5161238
May 1	02 25 05.87	0.17	13 53 03.0	2.51	06.62	0.1232386	11 48.4	31 11 11.2	1 58 26.9	9.5103663
2	02 33 15.13	0.17	N. 14 43 24.9	2.51	06.63	0.1229192	11 52.6	36 56 26.5	S. 1 17 14.7	9.5050857
3	02 41 31.03	0.17	15 33 04.9	2.52	06.64	0.1221740	11 57.0	42 49 33.2	S. 0 34 16.7	9.5003698
4	02 49 53.04	0.18	16 21 51.1	2.53	06.66	0.1209837	12 01.4	48 49 47.8	N. 0 09 56.1	9.4963032
5	02 58 20.40	0.18	17 09 31.0	2.54	06.69	0.1193315	12 05.9	54 56 16.4	0 54 47.8	9.4929645
6	03 06 52.58	0.18	17 55 52.4	2.55	06.72	0.1172031	12 10.5	61 07 54.5	1 39 37.9	9.4904216
7	03 15 28.38	0.18	18 40 42.8	2.57	06.76	0.1145892	12 15.2	67 23 28.4	2 23 43.6	9.4887287
8	03 24 06.83	0.18	N. 19 23 50.1	2.59	06.81	0.1114841	12 19.9	73 41 36.4	N. 3 06 20.7	9.4879231
9	03 32 46.79	0.19	20 05 03.2	2.61	06.87	0.1078869	12 24.7	80 00 51.0	3 46 46.7	9.4880231
10	03 41 27.05	0.19	20 44 11.7	2.63	06.93	0.1038020	12 29.4	86 19 41.9	4 24 21.9	9.4890263
11	03 50 06.33	0.19	21 21 06.6	2.66	07.00	0.0992382	12 34.1	92 36 38.1	4 58 32.1	9.4909101
12	03 58 43.38	0.19	21 55 40.3	2.69	07.08	0.0942085	12 38.8	98 50 11.9	5 28 49.7	9.4936335
13	04 07 16.91	0.20	22 27 46.8	2.72	07.17	0.0887299	12 43.4	104 59 00.7	5 54 54.7	9.4971389
14	04 15 45.68	0.20	N. 22 57 21.5	2.76	07.27	0.0828227	12 48.0	111 01 50.2	N. 6 16 35.1	9.5013552
15	04 24 08.52	0.20	23 24 21.8	2.80	07.38	0.0765099	12 52.5	116 57 36.0	6 33 46.6	9.5062029
16	04 32 24.31	0.21	23 48 46.3	2.84	07.49	0.0698150	12 56.8	122 45 24.6	6 46 32.0	9.5115959
17	04 40 32.00	0.21	24 10 35.3	2.89	07.62	0.0627645	13 01.0	128 24 34.0	6 54 59.9	9.5174467
18	04 48 30.65	0.22	N. 24 29 50.1	2.94	07.75	0.0553837	13 05.0	133 54 34.0	N. 6 59 23.8	9.5236679

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MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Semid. passg. Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.		Meridian Passage.	Heliocentric Longitude.			Heliocentric Latitude.			Log. of Rad. Vect.		
	Noon.				Noon.					Noon.			Noon.			Noon.					
	h	m	s	s	°	'	"	"				h	m	°	'	"	°	'	"		
May 18	04	48	30.65	0.22	N.24	29	50.1	2.94	07.75	0.0553837	13	05.0	133	54	34.0	N. 6	59	23.8	9.5236679		
19	04	56	19.39	0.22	24	46	33.2	2.99	07.89	0.0476986	13	08.9	139	15	04.9	7	00	00.4	.5301764		
20	05	03	57.43	0.22	25	00	48.2	3.05	08.03	0.0397342	13	12.6	144	25	57.0	6	57	08.8	.5368932		
21	05	11	24.05	0.23	25	12	39.3	3.11	08.18	0.0315148	13	16.1	149	27	09.2	6	51	09.3	.5437466		
22	05	18	38.60	0.23	25	22	11.3	3.17	08.34	0.0230639	13	19.4	154	18	47.6	6	42	22.3	.5506712		
23	05	25	40.51	0.24	25	29	29.6	3.23	08.51	0.0144040	13	22.4	159	01	04.3	6	31	07.9	.5576092		
24	05	32	29.25	0.24	N.25	34	40.1	3.30	08.69	0.0055558	13	25.3	163	34	16.1	N. 6	17	45.3	9.5645105		
25	05	39	04.33	0.25	25	37	48.3	3.37	08.87	9.9965396	13	27.9	167	58	43.2	6	02	32.3	.5713310		
26	05	45	25.29	0.25	25	39	00.6	3.44	09.06	.9873741	13	30.3	172	14	48.5	5	45	45.6	.5780336		
27	05	51	31.73	0.26	25	38	23.3	3.51	09.26	.9780777	13	32.5	176	22	56.5	5	27	39.9	.5845867		
28	05	57	23.24	0.26	25	36	02.5	3.59	09.46	.9686677	13	34.4	180	23	32.6	5	08	28.8	.5909645		
29	06	02	59.47	0.27	25	32	04.6	3.67	09.67	.9591610	13	36.0	184	17	02.7	4	48	24.3	.5971451		
30	06	08	20.03	0.28	N.25	26	35.7	3.75	09.88	9.9495739	13	37.4	188	03	52.6	N. 4	27	36.8	9.6031110		
31	06	13	24.57	0.28	25	19	42.1	3.83	10.10	.9399228	13	38.5	191	44	28.0	4	06	15.7	.6088477		
June 1	06	18	12.74	0.29	25	11	29.8	3.92	10.33	.9302242	13	39.4	195	19	13.7	3	44	29.0	.6143443		
2	06	22	44.20	0.29	25	02	05.0	4.01	10.57	.9204953	13	39.9	198	48	33.9	3	22	23.8	.6195920		
3	06	26	58.57	0.30	24	51	33.6	4.10	10.81	.9107527	13	40.2	202	12	52.2	3	00	06.1	.6245841		
4	06	30	55.52	0.31	24	40	01.3	4.19	11.05	.9010150	13	40.2	205	32	30.8	2	37	41.2	.6293154		
5	06	34	34.72	0.32	N.24	27	34.2	4.29	11.30	9.8913014	13	39.9	208	47	51.3	N. 2	15	13.5	9.6337827		
6	06	37	55.81	0.32	24	14	17.9	4.39	11.56	.8816328	13	39.3	211	59	14.2	1	52	47.2	.6379836		
7	06	40	58.45	0.33	24	00	18.1	4.49	11.82	.8720310	13	38.4	215	06	59.2	1	30	25.4	.6419165		
8	06	43	42.35	0.34	23	45	40.3	4.59	12.08	.8625202	13	37.1	218	11	25.1	1	08	11.1	.6455808		
9	06	46	07.16	0.34	23	30	30.0	4.69	12.34	.8531261	13	35.6	221	12	49.8	0	46	06.7	.6489762		
10	06	48	12.64	0.35	23	14	52.8	4.79	12.60	.8438770	13	33.7	224	11	30.4	0	24	14.8	.6521032		
11	06	49	58.55	0.35	N.22	58	54.0	4.89	12.87	9.8348041	13	31.5	227	07	43.2	N. 0	02	36.7	9.6549621		
12	06	51	24.68	0.36	22	42	39.1	4.99	13.14	.8259402	13	29.0	230	01	44.1	S. 0	18	45.5	.6575539		
13	06	52	30.92	0.36	22	26	13.6	5.09	13.40	.8173217	13	26.1	232	53	48.1	0	39	50.4	.6598795		
14	06	53	17.21	0.37	22	09	42.5	5.19	13.66	.8089871	13	22.9	235	44	09.8	1	00	36.8	.6619400		
15	06	53	43.60	0.38	21	53	11.4	5.29	13.92	.8009782	13	19.4	238	33	03.2	1	21	03.3	.6637363		
16	06	53	50.24	0.38	21	36	45.6	5.38	14.16	.7933395	13	15.6	241	20	42.1	1	41	08.9	.6652692		
17	06	53	37.43	0.39	N.21	20	30.5	5.47	14.40	9.7861177	13	11.4	244	07	19.6	S. 2	00	52.4	9.6665398		
18	06	53	05.61	0.40	21	04	31.3	5.55	14.63	.7793611	13	07.0	246	53	08.8	2	20	12.9	.6675490		
19	06	52	15.39	0.40	20	48	53.6	5.63	14.84	.7731212	13	02.2	249	38	22.3	2	39	09.2	.6682970		
20	06	51	07.60	0.41	20	33	42.6	5.70	15.03	.7674485	12	57.1	252	23	12.7	2	57	40.4	.6687846		
21	06	49	43.28	0.41	20	19	03.8	5.77	15.21	.7623945	12	51.8	255	07	52.1	3	15	45.3	.6690120		
22	06	48	03.64	0.41	20	05	02.7	5.83	15.36	.7580099	12	46.2	257	52	33.1	3	33	22.8	.6689794		
23	06	46	10.21	0.42	N.19	51	44.4	5.88	15.49	9.7543427	12	40.4	260	37	27.5	S. 3	50	31.8	9.6686869		
24	06	44	04.66	0.42	19	39	14.3	5.92	15.60	.7514377	12	34.4	263	22	47.9	4	07	11.0	.6681341		
25	06	41	48.92	0.42	19	27	37.5	5.95	15.67	.7493351	12	28.2	266	08	46.3	4	23	18.9	.6673208		
26	06	39	25.12	0.42	19	16	59.0	5.97	15.72	.7480687	12	21.9	268	55	35.2	4	38	54.1	.6662464		
27	06	36	55.52	0.42	19	07	23.5	5.97	15.73	.7476662	12	15.5	271	43	27.1	4	53	55.0	.6649102		
28	06	34	22.55	0.42	18	58	55.6	5.97	15.72	.7481461	12	09.0	274	32	34.7	5	08	19.6	.6633115		
29	06	31	48.71	0.42	N.18	51	39.0	5.95	15.67	9.7495188	12	02.5	277	23	11.1	S. 5	22	06.1	9.6614493		
30	06	29	16.53	0.42	18	45	37.3	5.92	15.58	.7517857	11	56.1	280	15	29.5	5	35	12.2	.6593225		
July 1	06	26	48.57	0.41	18	40	53.5	5.87	15.47	.7549378	11	49.7	283	09	43.6	5	47	35.4	.6569303		
2	06	24	27.31	0.41	18	37	29.4	5.82	15.33	.7589583	11	43.4	286	06	07.6	5	59	13.2	.6542718		
3	06	22	15.12	0.40	N.18	35	26.6	5.76	15.16	9.7638211	11	37.3	289	04	55.8	S. 6	10	02.6	9.6513458		

MERCURY, 1928.

MEAN TIME.

Date.	Apparent Right Ascension.	Sid. Time of Semid. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.	Meridian Passage.	Heliocentric Longitude.	Heliocentric Latitude.	Log. of Rad. Vect.
	Noon.		Noon.			Noon.		Noon.	Noon.	Noon.
	h m s	s	° ' "	"	"		h m	° ' "	° ' "	
July 3	06 22 15.12	0.40	N. 18 35 26.6	5.76	15.16	9.7638211	11 37.3	289 04 55.8	S. 6 10 02.6	9.6513458
4	06 20 14.25	0.39	18 34 45.6	5.68	14.96	9.7694926	11 31.4	292 06 23.5	6 20 00.2	9.6481518
5	06 18 26.78	0.39	18 35 26.1	5.60	14.74	9.7759326	11 25.7	295 10 46.1	6 29 02.6	9.6446890
6	06 16 54.58	0.39	18 37 26.9	5.51	14.50	9.7830951	11 20.2	298 18 19.8	6 37 05.8	9.6409574
7	06 15 39.32	0.38	18 40 45.9	5.41	14.24	9.7909299	11 15.0	301 29 21.5	6 44 05.4	9.6369574
8	06 14 42.47	0.37	18 45 20.2	5.30	13.97	9.7993839	11 10.1	304 44 08.7	6 49 56.7	9.6326896
9	06 14 05.27	0.37	N. 18 51 05.8	5.19	13.68	9.8084015	11 05.6	308 02 59.6	S. 6 54 34.6	9.6281559
10	06 13 48.77	0.36	18 57 58.2	5.08	13.38	9.8179267	11 01.3	311 26 13.0	6 57 53.4	9.6233588
11	06 13 53.81	0.35	19 05 52.0	4.97	13.08	9.8279033	10 57.5	314 54 08.6	6 59 46.9	9.6183023
12	06 14 21.06	0.34	19 14 41.2	4.85	12.77	9.8382762	10 54.0	318 27 06.7	7 00 08.7	9.6129918
13	06 15 11.08	0.33	19 24 19.0	4.73	12.46	9.8489908	10 50.9	322 05 28.2	6 58 51.6	9.6074341
14	06 16 24.20	0.32	19 34 38.2	4.62	12.15	9.8599951	10 48.1	325 49 34.8	6 55 48.1	9.6016386
15	06 18 00.74	0.31	N. 19 45 30.9	4.50	11.84	9.8712382	10 45.8	329 39 48.4	S. 6 50 50.3	9.5956177
16	06 20 00.81	0.31	19 56 48.8	4.38	11.53	9.8826714	10 43.8	333 36 31.5	6 43 49.7	9.5893862
17	06 22 24.52	0.30	20 08 23.1	4.26	11.23	9.8942488	10 42.3	337 40 06.6	6 34 37.9	9.5829621
18	06 25 11.88	0.30	20 20 04.5	4.15	10.93	9.9059252	10 41.1	341 50 56.1	6 23 06.3	9.5763687
19	06 28 22.80	0.29	20 31 43.3	4.04	10.64	9.9176580	10 40.3	346 09 22.0	6 09 06.2	9.5696333
20	06 31 57.17	0.28	20 43 09.5	3.93	10.36	9.9294049	10 39.9	350 35 45.3	5 52 29.4	9.5627890
21	06 35 54.81	0.27	N. 20 54 12.4	3.83	10.08	9.9411262	10 39.9	355 10 25.7	S. 5 33 08.5	9.5558742
22	06 40 15.46	0.27	21 04 41.2	3.73	09.81	9.9527820	10 40.3	359 53 40.7	5 10 57.3	9.5489345
23	06 44 58.81	0.26	21 14 24.8	3.63	09.55	9.9643332	10 41.0	4 45 45.1	4 45 51.1	9.5420220
24	06 50 04.45	0.25	21 23 11.6	3.53	09.31	9.9757413	10 42.2	9 46 49.8	4 17 47.6	9.5351965
25	06 55 31.89	0.25	21 30 50.0	3.44	09.07	9.9869682	10 43.7	14 57 01.2	3 46 47.4	9.5285248
26	07 01 20.53	0.24	21 37 08.2	3.35	08.84	9.9979759	10 45.5	20 16 20.0	3 12 54.9	9.5220809
27	07 07 29.68	0.24	N. 21 41 54.5	3.27	08.62	0.0087267	10 47.7	25 44 39.9	S. 2 36 18.9	9.5159441
28	07 13 58.44	0.23	21 44 57.3	3.19	08.42	0.0191832	10 50.2	31 21 46.5	1 57 13.3	9.5101998
29	07 20 45.83	0.23	21 46 05.6	3.12	08.22	0.0293092	10 53.1	37 07 16.5	1 15 57.4	9.5049350
30	07 27 50.68	0.22	21 45 08.8	3.05	08.04	0.0390694	10 56.2	43 00 36.8	S. 0 32 56.7	9.5002373
31	07 35 11.67	0.21	21 41 57.6	2.99	07.87	0.0484307	10 59.6	49 01 03.6	N. 0 11 17.9	9.4961917
Aug. 1	07 42 47.30	0.21	21 36 23.4	2.93	07.71	0.0573617	11 03.3	55 07 42.5	0 56 10.1	9.4928760
2	07 50 35.94	0.20	N. 21 28 19.4	2.87	07.56	0.0658348	11 07.1	61 19 28.9	N. 1 40 59.5	9.49023580
3	07 58 35.84	0.20	21 17 40.3	2.82	07.43	0.0738260	11 11.2	67 35 08.6	2 25 03.1	9.4886914
4	08 06 45.14	0.20	21 04 22.8	2.77	07.30	0.0813163	11 15.4	73 53 19.9	3 07 36.9	9.4879131
5	08 15 01.94	0.19	20 48 25.3	2.72	07.18	0.0882912	11 19.8	80 12 35.1	3 47 58.1	9.4880403
6	08 23 24.32	0.19	20 29 48.4	2.69	07.07	0.0947415	11 24.2	86 31 23.9	4 25 27.6	9.4890704
7	08 31 50.37	0.19	20 08 34.7	2.65	06.98	0.1006642	11 28.7	92 48 15.3	4 59 31.1	9.4909803
8	08 40 18.29	0.19	N. 19 44 48.4	2.62	06.89	0.1060613	11 33.2	99 01 41.6	N. 5 29 41.2	9.4937282
9	08 48 46.36	0.18	19 18 35.6	2.59	06.82	0.1109393	11 37.8	105 10 20.6	5 55 38.3	9.4972561
10	08 57 13.01	0.18	18 50 03.3	2.56	06.75	0.1153103	11 42.3	111 12 58.2	6 17 10.6	9.5014928
11	09 05 36.86	0.18	18 19 20.0	2.54	06.69	0.1191890	11 46.8	117 08 30.3	6 34 13.9	9.5063582
12	09 13 56.69	0.18	17 46 34.7	2.52	06.64	0.1225943	11 51.2	122 56 03.8	6 46 51.3	9.5117663
13	09 22 11.45	0.17	17 11 57.1	2.50	06.59	0.1255469	11 55.5	128 34 57.0	6 55 11.5	9.5176295
14	09 30 20.30	0.17	N. 16 35 36.8	2.49	06.55	0.1280685	11 59.7	134 04 40.1	N. 6 59 28.2	9.5238606
15	09 38 22.57	0.17	15 57 43.7	2.48	06.52	0.1301829	12 03.8	139 24 53.6	6 59 58.1	9.5303764
16	09 46 17.74	0.17	15 18 27.3	2.47	06.49	0.1319127	12 07.8	144 35 28.2	6 57 00.5	9.5370984
17	09 54 05.43	0.17	14 37 57.0	2.46	06.47	0.1332811	12 11.7	149 36 23.0	6 50 55.6	9.5439549
18	10 01 45.40	0.17	N. 13 56 21.6	2.45	06.46	0.1343108	12 15.4	154 27 44.2	N. 6 42 03.8	9.5508807

MERCURY, 1928.

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MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Semi-d. passg. Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.		Meridian Passage.	Heliocentric Longitude.		Heliocentric Latitude.		Log. of Rad. Vect.		
	h	m	s		°	'	"			h	m		°	'	°	'	°	'	°
Aug. 18	10	01	45.40	0.17	N. 13	56	21.6	2.45	06.46	0.1343108	12	15.4	154	27	44.2	N. 6	42	03.8	9.5508807
19	10	09	17.50	0.17	13	13	49.5	2.45	06.45	.1350229	12	19.0	159	09	44.2	6	30	45.2	.5578183
20	10	16	41.69	0.17	12	30	28.5	2.45	06.44	.1354378	12	22.5	163	42	39.9	6	17	18.9	.5647177
21	10	23	58.00	0.17	11	46	26.0	2.45	06.44	.1355746	12	25.8	168	06	51.5	6	02	02.8	.5715352
22	10	31	06.53	0.17	11	01	48.5	2.45	06.44	.1354503	12	29.0	172	22	42.1	5	45	13.4	.5782337
23	10	38	07.40	0.17	10	16	42.5	2.45	06.45	.1350812	12	32.1	176	30	36.0	5	27	05.4	.5847821
24	10	45	00.80	0.17	N. 9	31	13.5	2.45	06.46	0.1344820	12	35.0	180	30	58.9	N. 5	07	52.6	9.5911543
25	10	51	46.93	0.17	8	45	26.9	2.46	06.47	.1336658	12	37.8	184	24	16.5	4	47	46.6	.5973285
26	10	58	26.01	0.17	7	59	27.4	2.46	06.48	.1326445	12	40.6	188	10	54.7	4	26	58.0	.6032878
27	11	04	58.27	0.17	7	13	19.4	2.47	06.50	.1314284	12	43.2	191	51	19.2	4	05	35.9	.6090175
28	11	11	23.96	0.17	6	27	07.0	2.48	06.52	.1300274	12	45.7	195	25	54.7	3	43	48.6	.6145068
29	11	17	43.34	0.17	5	40	53.8	2.49	06.54	.1284490	12	48.0	198	55	05.5	3	21	42.8	.6197468
30	11	23	56.62	0.17	N. 4	54	43.1	2.50	06.57	0.1267009	12	50.3	202	19	15.0	N. 2	59	24.8	9.6247312
31	11	30	04.08	0.17	4	08	38.4	2.51	06.60	.1247889	12	52.5	205	38	45.4	2	36	59.7	.6294547
Sept. 1	11	36	05.93	0.17	3	22	42.3	2.52	06.63	.1227182	12	54.6	208	53	58.4	2	14	32.1	.6339142
2	11	42	02.40	0.17	2	36	57.3	2.53	06.66	.1204931	12	56.6	212	05	14.5	1	52	05.8	.6381071
3	11	47	53.71	0.17	1	51	26.3	2.54	06.70	.1181168	12	58.5	215	12	53.2	1	29	44.2	.6420320
4	11	53	40.05	0.17	1	06	11.3	2.56	06.74	.1155922	13	00.3	218	17	13.3	1	07	30.1	.6456883
5	11	59	21.63	0.17	N. 0	21	14.6	2.58	06.78	0.1129208	13	02.1	221	18	32.7	N. 0	45	26.2	9.6490757
6	12	04	58.61	0.17	S. 0	23	21.7	2.59	06.83	.1101041	13	03.7	224	17	08.5	0	23	34.5	.6521946
7	12	10	31.15	0.17	1	07	35.7	2.61	06.88	.1071423	13	05.3	227	13	17.0	N. 0	01	57.0	.6550456
8	12	15	59.41	0.18	1	51	25.4	2.63	06.93	.1040359	13	06.9	230	07	14.1	S. 0	19	24.7	.6576296
9	12	21	23.50	0.18	2	34	49.1	2.65	06.98	.1007837	13	08.3	232	59	14.7	0	40	29.1	.6599474
10	12	26	43.54	0.18	3	17	44.8	2.67	07.03	.0973845	13	09.7	235	49	33.4	1	01	14.9	.6619999
11	12	31	59.60	0.18	S. 4	00	10.9	2.69	07.09	0.0938372	13	11.0	238	38	24.3	S. 1	21	40.8	9.6637882
12	12	37	11.76	0.18	4	42	05.4	2.71	07.15	.0901390	13	12.3	241	26	01.1	1	41	45.7	.6653134
13	12	42	20.07	0.18	5	23	26.8	2.74	07.21	.0862877	13	13.5	244	12	36.9	2	01	28.5	.6665761
14	12	47	24.55	0.19	6	04	13.1	2.76	07.28	.0822801	13	14.6	246	58	24.7	2	20	48.2	.6675774
15	12	52	25.20	0.19	6	44	22.7	2.79	07.35	.0781129	13	15.7	249	43	37.1	2	39	43.8	.6683176
16	12	57	21.99	0.19	7	23	53.5	2.82	07.42	.0737822	13	16.7	252	28	26.8	2	58	14.1	.6687974
17	13	02	14.87	0.19	S. 8	02	43.6	2.85	07.50	0.0692840	13	17.6	255	13	06.0	S. 3	16	18.2	9.6690170
18	13	07	03.77	0.19	8	40	51.2	2.88	07.58	.0646132	13	18.5	257	57	47.1	3	33	54.9	.6689766
19	13	11	48.56	0.20	9	18	14.0	2.91	07.67	.0597656	13	19.3	260	42	42.0	3	51	03.0	.6686763
20	13	16	29.10	0.20	9	54	49.9	2.94	07.76	.0547356	13	20.0	263	28	03.2	4	07	41.2	.6681157
21	13	21	05.21	0.20	10	30	36.6	2.98	07.85	.0495180	13	20.7	266	14	02.8	4	23	48.1	.6672947
22	13	25	36.66	0.21	11	05	31.6	3.02	07.95	.0441069	13	21.2	269	00	53.3	4	39	22.3	.6662124
23	13	30	03.18	0.21	S. 11	39	32.2	3.06	08.05	0.0384967	13	21.7	271	48	47.1	S. 4	54	22.0	9.6648683
24	13	34	24.44	0.21	12	12	35.5	3.10	08.16	.0326810	13	22.1	274	37	57.1	5	08	45.5	.6632614
25	13	38	40.07	0.22	12	44	38.5	3.14	08.28	.0266544	13	22.5	277	28	36.2	5	22	30.7	.6613911
26	13	42	49.64	0.22	13	15	37.9	3.19	08.40	.0204107	13	22.7	280	20	57.7	5	35	35.5	.6592564
27	13	46	52.64	0.22	13	45	30.1	3.24	08.52	.0139440	13	22.8	283	15	15.4	5	47	57.4	.6568561
28	13	50	48.50	0.23	14	14	10.9	3.29	08.65	.0072491	13	22.8	286	11	43.3	5	59	33.8	.6541894
29	13	54	36.58	0.23	S. 14	41	36.1	3.34	08.79	0.0003211	13	22.6	289	10	36.0	S. 6	10	21.6	9.6512553
30	13	58	16.14	0.24	15	07	40.9	3.39	08.94	.99931559	13	22.3	292	12	08.6	6	20	17.6	.6480529
Oct. 1	14	01	46.34	0.24	15	32	20.0	3.45	09.09	.9857507	13	21.8	295	16	36.6	6	29	18.3	.6445819
2	14	05	06.26	0.24	15	55	27.5	3.51	09.25	.9781038	13	21.2	298	24	16.2	6	37	19.5	.6408421
3	14	08	14.85	0.25	S. 16	16	56.9	3.58	09.42	.9702157	13	20.4	301	35	24.4	S. 6	44	17.1	9.6368337

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
July 3	06 51 30.45	N. 23 33 04.9	0.2394189	12 06.5	Aug. 18	10 42 32.93	N. 9 44 07.2	0.2217839	12 56.2
4	06 56 51.59	23 28 19.1	0.2393653	12 07.9	19	10 47 10.42	9 15 53.6	0.2210612	12 56.9
5	07 02 12.34	23 22 51.6	0.2392973	12 09.3	20	10 51 47.13	8 47 25.2	0.2203241	12 57.5
6	07 07 32.66	23 16 42.3	0.2392147	12 10.7	21	10 56 23.08	8 18 42.7	0.2195728	12 58.2
7	07 12 52.48	23 09 52.0	0.2391176	12 12.1	22	11 00 58.31	7 49 46.8	0.2188073	12 58.8
8	07 18 11.76	23 02 20.5	0.2390060	12 13.4	23	11 05 32.86	7 20 38.4	0.2180277	12 59.4
9	07 23 30.45	22 54 08.1	0.2388797	12 14.8	24	11 10 06.75	6 51 18.0	0.2172340	13 00.1
10	07 28 48.51	22 45 15.3	0.2387387	12 16.2	25	11 14 40.03	6 21 46.6	0.2164264	13 00.7
11	07 34 05.88	22 35 42.2	0.2385829	12 17.5	26	11 19 12.74	5 52 04.7	0.2156049	13 01.3
12	07 39 22.52	22 25 20.3	0.2384123	12 18.9	27	11 23 44.91	5 22 13.1	0.2147696	13 01.9
13	07 44 38.39	22 14 37.0	0.2382267	12 20.2	28	11 28 16.58	4 52 12.5	0.2139207	13 02.5
14	07 49 53.44	22 03 05.6	0.2380262	12 21.5	29	11 32 47.79	4 22 03.7	0.2130581	13 03.1
15	07 55 07.64	21 50 55.5	0.2378107	12 22.8	30	11 37 18.58	3 51 47.3	0.2121819	13 03.6
16	08 00 20.95	21 38 07.3	0.2375801	12 24.1	31	11 41 49.01	3 21 24.1	0.2112922	13 04.2
17	08 05 33.12	21 24 41.4	0.2373144	12 25.3	Sept. 1	11 46 19.10	2 50 54.8	0.2103892	13 04.7
18	08 10 44.71	21 10 38.3	0.2370730	12 26.6	2	11 50 48.90	2 20 20.1	0.2094727	13 05.3
19	08 15 55.14	20 55 58.0	0.2367978	12 27.8	3	11 55 18.46	1 49 40.7	0.2085429	13 05.8
20	08 21 04.51	20 40 42.7	0.2365070	12 29.0	4	11 59 47.83	1 18 57.2	0.2075996	13 06.4
21	08 26 12.81	20 24 51.3	0.2362012	12 30.2	5	12 04 17.04	0 48 10.4	0.2066429	13 06.9
22	08 31 20.07	20 08 25.0	0.2358805	12 31.4	6	12 08 46.14	N. 0 17 21.0	0.2056728	13 07.5
23	08 36 26.21	19 51 24.2	0.2355450	12 32.6	7	12 13 15.18	S. 0 13 30.3	0.2046891	13 08.0
24	08 41 31.24	19 33 49.7	0.2351948	12 33.7	8	12 17 44.19	0 44 22.9	0.2036918	13 08.6
25	08 46 35.13	19 15 42.0	0.2348300	12 34.8	9	12 22 13.22	1 15 15.9	0.2026808	13 09.1
26	08 51 37.88	18 57 01.8	0.2344505	12 35.9	10	12 26 42.31	1 46 08.6	0.2016560	13 09.7
27	08 56 39.47	18 37 44.8	0.2340565	12 37.0	11	12 31 11.51	2 17 00.4	0.2006174	13 10.2
28	09 01 39.02	18 18 06.5	0.2336481	12 38.1	12	12 35 40.86	2 47 50.4	0.1995649	13 10.7
29	09 06 37.10	17 57 52.7	0.2332253	12 39.1	13	12 40 10.39	3 18 38.0	0.1984985	13 11.3
30	09 11 34.20	17 37 09.1	0.2327881	12 40.1	14	12 44 40.15	3 49 22.4	0.1974181	13 11.8
31	09 16 34.10	17 15 56.2	0.2323367	12 41.2	15	12 49 10.17	4 20 02.9	0.1963236	13 12.4
Aug. 1	09 21 29.66	16 54 14.8	0.2318712	12 42.2	16	12 53 40.51	4 50 38.7	0.1952152	13 13.0
2	09 26 24.57	16 32 05.5	0.2313816	12 43.1	17	12 58 11.19	5 21 09.1	0.1940928	13 13.5
3	09 31 18.04	16 09 29.1	0.2308978	12 44.1	18	13 02 42.27	5 51 33.3	0.1929564	13 14.1
4	09 36 10.36	15 46 26.3	0.2303900	12 45.0	19	13 07 13.77	6 21 50.6	0.1918061	13 14.7
5	09 41 01.56	15 22 57.7	0.2298680	12 45.9	20	13 11 45.74	6 52 00.2	0.1906418	13 15.3
6	09 45 51.65	14 59 04.0	0.2293319	12 46.8	21	13 16 18.22	7 22 01.4	0.1894637	13 15.9
7	09 50 40.64	14 34 46.0	0.2287817	12 47.7	22	13 20 51.24	7 51 53.4	0.1882717	13 16.5
8	09 55 28.56	14 10 04.3	0.2282174	12 48.5	23	13 25 24.85	8 21 35.5	0.1870658	13 17.1
9	10 00 15.41	13 44 59.8	0.2276388	12 49.4	24	13 29 59.08	8 51 06.9	0.1858461	13 17.7
10	10 05 01.22	13 19 33.0	0.2270460	12 50.2	25	13 34 33.98	9 20 26.9	0.1846128	13 18.4
11	10 09 46.02	12 54 44.8	0.2264388	12 51.0	26	13 39 09.57	9 49 34.6	0.1833658	13 19.0
12	10 14 29.81	12 29 35.8	0.2258172	12 51.8	27	13 43 45.90	10 18 29.4	0.1821052	13 19.7
13	10 19 12.61	12 04 06.8	0.2251812	12 52.6	28	13 48 23.00	10 47 10.4	0.1808311	13 20.4
14	10 23 54.40	11 38 18.5	0.2245307	12 53.3	29	13 53 00.91	11 15 37.0	0.1795435	13 21.1
15	10 28 35.43	11 07 11.6	0.2238657	12 54.0	30	13 57 39.67	11 43 48.4	0.1782424	13 21.8
16	10 33 15.46	10 39 46.9	0.2231862	12 54.8	Oct. 1	14 02 19.31	12 11 43.8	0.1769279	13 22.5
17	10 37 54.62	10 12 05.2	0.2224923	12 55.5	2	14 06 59.87	12 39 22.5	0.1756000	13 23.2
18	10 42 32.93	N. 9 44 07.2	0.2217839	12 56.2	3	14 11 41.38	S. 13 06 43.7	0.1742586	13 24.0

	H.P.	S.D.		H.P.	S.D.		H.P.	S.D.		H.P.	S.D.
July 3	05.07	04.85	July 27	05.13	04.90	Aug. 20	05.30	05.07	Sept. 13	05.57	05.32
7	05.07	04.85	31	05.15	04.92	24	05.34	05.10	17	05.63	05.38
11	05.08	04.85	Aug. 4	05.18	04.95	28	05.38	05.14	21	05.69	05.44
15	05.09	04.86	8	05.20	04.97	Sept. 1	05.42	05.18	25	05.75	05.50
19	05.10	04.87	12	05.23	05.00	5	05.47	05.23	29	05.82	05.56
23	05.12	04.89	16	05.26	05.03	9	05.52	05.28	Oct. 3	05.89	05.63

MERCURY, 1928.

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MEAN TIME.

Date.	Apparent Right Ascension.	Sid. Time of Semi- passg. Merid.	Apparent Declination.	Semi- diameter.	Hor. Par.	Log. of True Dist. from the Earth.	Meridian Passage.	Heliocentric Longitude.	Heliocentric Latitude.	Log. of Rad. Vect.
	Noon.		Noon.			Noon.		Noon.	Noon.	Noon.
	h m s	s	° ' "	"	"		h m	° ' "	° ' "	
Nov. 18	14 31 23.95	0.19	S. 13 00 18.2	2.77	07.30	0.0811962	10 42.2	172 30 44.6	N. 5 44 40.5	9.5784364
19	14 37 04.60	0.19	13 33 28.1	2.73	07.19	.0878805	10 43.9	176 38 24.3	5 26 30.4	.5849801
20	14 42 50.54	0.18	14 06 39.9	2.69	07.08	.0941558	10 45.7	180 38 33.7	5 07 15.6	.5913469
21	14 48 41.23	0.18	14 39 45.2	2.65	06.99	.1000427	10 47.6	184 31 38.5	4 47 08.1	.5975151
22	14 54 36.16	0.18	15 12 37.3	2.62	06.90	.1055603	10 49.6	188 18 04.8	4 26 18.3	.6034677
23	15 00 34.96	0.18	15 45 09.7	2.59	06.82	.1107279	10 51.6	191 58 18.1	4 04 55.3	.6091905
24	15 06 37.29	0.18	S. 16 17 16.9	2.56	06.74	.01155629	10 53.7	195 32 43.1	N. 3 43 07.3	9.6146726
25	15 12 42.86	0.18	16 48 54.0	2.53	06.67	.1200819	10 55.9	199 01 44.2	3 21 01.1	.6199051
26	15 18 51.48	0.18	17 19 56.7	2.51	06.61	.1243006	10 58.1	202 25 44.6	2 58 42.7	.6248817
27	15 25 02.95	0.17	17 50 21.1	2.49	06.55	.1282335	11 00.4	205 45 06.7	2 36 17.5	.6295972
28	15 31 17.11	0.17	18 20 03.7	2.47	06.50	.1318938	11 02.7	209 00 11.9	2 13 49.8	.6340487
29	15 37 33.87	0.17	18 49 01.4	2.45	06.45	.1352941	11 05.0	212 11 20.9	1 51 23.6	.6382336
30	15 43 53.11	0.17	S. 19 17 11.2	2.43	06.40	.01384455	11 07.4	215 18 53.1	N. 1 29 02.2	9.6421504
Dec. 1	15 50 14.76	0.17	19 44 30.5	2.41	06.36	.1413584	11 09.8	218 23 07.2	1 06 48.5	.6457985
2	15 56 38.76	0.17	20 10 56.9	2.40	06.32	.1440423	11 12.3	221 24 21.2	0 44 44.9	.6491777
3	16 03 05.06	0.17	20 36 28.3	2.38	06.28	.1465056	11 14.8	224 22 52.1	0 22 53.6	.6522882
4	16 09 33.60	0.17	21 01 02.4	2.37	06.25	.1487563	11 17.3	227 18 56.2	N. 0 01 16.6	.6551309
5	16 16 04.35	0.17	21 24 37.2	2.36	06.22	.1508012	11 19.9	230 12 49.3	S. 0 20 04.6	.6577067
6	16 22 37.28	0.17	S. 21 47 10.9	2.35	06.19	.01526469	11 22.5	233 04 46.5	S. 0 41 08.4	9.6600162
7	16 29 12.35	0.17	22 08 41.8	2.34	06.17	.1542988	11 25.1	235 55 02.2	1 01 53.6	.6620606
8	16 35 49.54	0.17	22 29 08.0	2.34	06.15	.1557620	11 27.8	238 43 50.5	1 22 18.8	.6638408
9	16 42 28.81	0.17	22 48 28.0	2.33	06.13	.1570408	11 30.5	241 31 25.0	1 42 23.0	.6653579
10	16 49 10.14	0.17	23 06 40.2	2.32	06.11	.1581389	11 33.3	244 17 59.0	2 02 05.1	.6666125
11	16 55 53.49	0.17	23 23 43.1	2.32	06.10	.1590595	11 36.0	247 03 45.4	2 21 24.1	.6676057
12	17 02 38.82	0.17	S. 23 39 35.0	2.31	06.09	.01598053	11 38.9	249 48 57.0	S. 2 40 18.9	9.6683378
13	17 09 26.09	0.17	23 54 14.6	2.31	06.08	.1603781	11 41.7	252 33 46.1	2 58 48.4	.6688096
14	17 16 15.24	0.17	24 07 40.4	2.31	06.08	.1607798	11 44.6	255 18 25.0	3 16 51.7	.6690213
15	17 23 06.24	0.17	24 19 51.0	2.31	06.07	.1610111	11 47.5	258 03 06.2	3 34 27.5	.6689728
16	17 29 59.03	0.17	24 30 45.0	2.31	06.07	.1610726	11 50.4	260 48 01.7	3 51 34.6	.6686642
17	17 36 53.52	0.17	24 40 21.1	2.31	06.07	.1609643	11 53.4	263 33 23.8	4 08 11.9	.6680956
18	17 43 49.67	0.17	S. 24 48 38.0	2.31	06.08	.01606857	11 56.4	266 19 24.8	S. 4 24 17.8	9.6672664
19	17 50 47.36	0.17	24 55 34.2	2.31	06.08	.1602355	11 59.4	269 06 16.9	4 39 50.9	.6661759
20	17 57 46.54	0.17	25 01 08.5	2.31	06.09	.1596123	12 02.5	271 54 12.9	4 54 49.5	.6648236
21	18 04 47.08	0.17	25 05 19.8	2.32	06.10	.1588138	12 05.6	274 43 25.3	5 09 11.9	.6632086
22	18 11 48.89	0.17	25 08 06.7	2.32	06.12	.1578376	12 08.7	277 34 07.3	5 22 55.9	.6613301
23	18 18 51.85	0.17	25 09 28.1	2.33	06.13	.1566797	12 11.8	280 26 32.2	5 35 59.3	.6591871
24	18 25 55.84	0.17	S. 25 09 22.7	2.34	06.15	.01553367	12 14.9	283 20 53.7	S. 5 48 19.9	9.6567784
25	18 33 00.70	0.17	25 07 49.5	2.35	06.17	.1538038	12 18.0	286 17 25.8	5 59 54.7	.6541034
26	18 40 06.29	0.17	25 04 47.5	2.36	06.20	.1520756	12 21.2	289 16 23.2	6 10 41.0	.6511609
27	18 47 12.45	0.17	25 00 15.5	2.37	06.23	.1501462	12 24.4	292 18 00.8	6 20 35.3	.6479503
28	18 54 19.00	0.18	24 54 12.8	2.38	06.26	.1480084	12 27.5	295 22 34.4	6 29 34.2	.6444708
29	19 01 25.72	0.18	24 46 38.3	2.39	06.29	.1456549	12 30.7	298 30 20.2	6 37 33.5	.6407226
30	19 08 32.43	0.18	S. 24 37 31.4	2.40	06.33	.01430770	12 33.9	301 41 35.1	S. 6 44 29.1	9.6367059
31	19 15 38.85	0.18	24 26 51.3	2.41	06.37	.1402650	12 37.1	304 56 36.5	6 50 16.0	.6324216
32	19 22 44.74	0.18	S. 24 14 37.6	2.43	06.41	.01372087	12 40.2	308 15 42.7	S. 6 54 49.2	9.6278713

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Jan. 1	15 41 24.08	S. 17 06 01.5	9.9940703	09 01.7	Feb. 16	19 36 39.31	S. 21 08 22.3	0.1089686	09 55.6
2	15 46 11.36	17 22 59.8	9.9971556	09 02.5	17	19 41 51.45	20 59 18.3	0.1109481	09 56.8
3	15 50 59.36	17 39 35.8	0.0002106	09 03.4	18	19 47 03.03	20 49 37.2	0.1129085	09 58.1
4	15 55 48.66	17 55 48.8	0.0032358	09 04.3	19	19 52 13.99	20 39 19.4	0.1148500	09 59.3
5	16 00 39.26	18 11 38.0	0.0062314	09 05.2	20	19 57 24.31	20 28 25.2	0.1167728	10 00.6
6	16 05 31.15	18 27 02.6	0.0091977	09 06.1	21	20 02 33.93	20 16 55.1	0.1186772	10 01.8
7	16 10 24.31	18 42 01.9	0.0121353	09 07.0	22	20 07 42.82	20 04 49.3	0.1205633	10 03.0
8	16 15 18.73	18 56 35.2	0.0150441	09 08.0	23	20 12 50.94	19 52 08.4	0.1224313	10 04.2
9	16 20 14.40	19 10 41.8	0.0179246	09 09.0	24	20 17 58.25	19 38 52.8	0.1242815	10 05.4
10	16 25 11.28	19 24 20.8	0.0207768	09 10.0	25	20 23 04.74	19 25 02.9	0.1261141	10 06.5
11	16 30 09.37	19 37 31.7	0.0236009	09 11.0	26	20 28 10.36	19 10 39.3	0.1279295	10 07.7
12	16 35 08.63	19 50 13.6	0.0263973	09 12.0	27	20 33 15.10	18 55 42.4	0.1297278	10 08.8
13	16 40 09.05	20 02 26.0	0.0291661	09 13.1	28	20 38 18.94	18 40 12.8	0.1315094	10 10.0
14	16 45 10.57	20 14 08.1	0.0319076	09 14.2	29	20 43 21.85	18 24 10.9	0.1332743	10 11.1
15	16 50 13.18	20 25 10.3	0.0346220	09 15.3	Mar. 1	20 48 23.82	18 07 37.4	0.1350259	10 12.2
16	16 55 16.85	20 35 59.0	0.0373097	09 16.4	2	20 53 24.84	17 50 32.8	0.1367552	10 13.2
17	17 00 21.52	20 46 06.6	0.0399708	09 17.5	3	20 58 24.90	17 32 57.7	0.1384714	10 14.3
18	17 05 27.17	20 55 41.4	0.0426056	09 18.7	4	21 03 23.98	17 14 52.6	0.1401717	10 15.3
19	17 10 33.75	21 04 42.9	0.0452144	09 19.8	5	21 08 22.08	16 56 18.1	0.1418561	10 16.4
20	17 15 41.23	21 13 10.6	0.0477975	09 21.0	6	21 13 19.20	16 37 14.8	0.1435248	10 17.4
21	17 20 49.54	21 21 03.9	0.0503552	09 22.2	7	21 18 15.33	16 17 43.4	0.1451778	10 18.4
22	17 25 58.66	21 28 22.4	0.0528878	09 23.5	8	21 23 10.47	15 57 44.4	0.1468152	10 19.3
23	17 31 08.53	21 35 05.6	0.0553957	09 24.7	9	21 28 04.63	15 37 18.5	0.1484370	10 20.3
24	17 36 19.10	21 41 13.0	0.0578791	09 25.9	10	21 32 57.80	15 16 26.3	0.1500433	10 21.3
25	17 41 30.33	21 46 44.3	0.0603385	09 27.1	11	21 37 49.99	14 55 08.5	0.1516341	10 22.2
26	17 46 42.15	21 51 39.0	0.0627742	09 28.4	12	21 42 41.19	14 33 25.7	0.1532093	10 23.1
27	17 51 54.53	21 55 56.0	0.0651865	09 29.7	13	21 47 31.43	14 11 18.5	0.1547692	10 24.0
28	17 57 07.41	21 59 37.5	0.0675758	09 30.9	14	21 52 20.71	13 48 47.7	0.1563136	10 24.9
29	18 02 20.74	22 02 40.8	0.0699426	09 32.2	15	21 57 09.03	13 25 53.9	0.1578426	10 25.7
30	18 07 34.47	22 05 06.3	0.0722871	09 33.5	16	22 01 56.42	13 02 37.8	0.1593562	10 26.6
31	18 12 48.55	22 06 53.9	0.0746099	09 34.8	17	22 06 42.87	12 39 00.1	0.1608545	10 27.4
Feb. 1	18 18 02.92	22 08 03.4	0.0769110	09 36.1	18	22 11 28.40	12 15 01.4	0.1623374	10 28.2
2	18 23 17.54	22 08 34.5	0.0791909	09 37.4	19	22 16 13.04	11 50 42.6	0.1638050	10 29.0
3	18 28 32.36	22 08 27.2	0.0814497	09 38.7	20	22 20 56.79	11 26 04.2	0.1652573	10 29.8
4	18 33 47.32	22 07 41.4	0.0836877	09 40.0	21	22 25 39.67	11 01 07.0	0.1666915	10 30.6
5	18 39 02.38	22 06 16.0	0.0859050	09 41.3	22	22 30 21.71	10 35 51.7	0.1681166	10 31.4
6	18 44 17.40	22 04 13.7	0.0881017	09 42.6	23	22 35 02.92	10 10 19.1	0.1695237	10 32.1
7	18 49 32.58	22 01 31.7	0.0902781	09 43.9	24	22 39 43.32	9 44 29.8	0.1709160	10 32.8
8	18 54 47.61	21 58 11.1	0.0924342	09 45.2	25	22 44 22.93	9 18 24.5	0.1722936	10 33.6
9	19 00 02.52	21 54 11.7	0.0945702	09 46.5	26	22 49 01.79	8 52 04.0	0.1736567	10 34.3
10	19 05 17.26	21 49 33.8	0.0966862	09 47.9	27	22 53 39.92	8 25 29.0	0.1750054	10 35.0
11	19 10 31.79	21 44 17.3	0.0987823	09 49.2	28	22 58 17.35	7 58 40.1	0.1763399	10 35.6
12	19 15 46.04	21 38 22.4	0.1008586	09 50.5	29	23 02 54.11	7 31 38.1	0.1776602	10 36.3
13	19 20 59.97	21 31 49.2	0.1029152	09 51.8	30	23 07 30.24	7 04 23.7	0.1789666	10 37.0
14	19 26 13.52	21 24 38.0	0.1049524	09 53.0	31	23 12 05.76	6 36 57.5	0.1802594	10 37.6
15	19 31 26.65	21 16 49.0	0.1069701	09 54.3	Apr. 1	23 16 40.72	6 09 20.2	0.1815383	10 38.3
16	19 36 39.31	S. 21 08 22.3	0.1089686	09 55.6	2	23 21 15.14	S. 5 41 32.6	0.1828033	10 38.9

	H.P.	S.D.		H.P.	S.D.		H.P.	S.D.		H.P.	S.D.
	"	"		"	"		"	"		"	"
Jan. 1	08.92	08.52	Jan. 25	07.66	07.32	Feb. 18	06.78	06.48	Mar. 13	06.16	05.89
5	08.67	08.29	29	07.49	07.16	22	06.67	06.37	17	06.08	05.81
9	08.44	08.07	Feb. 2	07.33	07.01	26	06.55	06.26	21	05.99	05.73
13	08.23	07.87	6	07.18	06.86	Mar. 1	06.45	06.16	25	05.92	05.66
17	08.03	07.67	10	07.04	06.73	5	06.35	06.07	29	05.84	05.58
21	07.84	07.49	14	06.91	06.60	9	06.25	05.97	Apr. 2	05.78	05.52

VENUS, 1928.

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Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
h m s	° ' "	° ' "		h m	h m s	° ' "			h m
Apr. 2	23 21 15.14	S. 5 41 32.6	0.1828033	10 38.9	May 18	02 52 45.67	N. 15 24 32.1	0.2260719	11 09.0
3	23 25 46.07	5 13 35.3	.1840542	10 39.5	19	02 57 36.31	15 47 22.7	.2266863	11 09.9
4	23 30 22.53	4 45 28.9	.1852917	10 40.1	20	03 02 28.02	16 09 49.9	.2272862	11 10.9
5	23 34 55.58	4 17 14.2	.1865156	10 40.7	21	03 07 20.80	16 31 52.8	.2278717	11 11.8
6	23 39 28.23	3 48 51.9	.1877258	10 41.3	22	03 12 14.67	16 53 30.9	.2284427	11 12.7
7	23 44 00.53	3 20 22.6	.1889223	10 41.9	23	03 17 09.63	17 14 43.3	.2289993	11 13.7
8	23 48 32.52	2 51 47.0	.1901052	10 42.5	24	03 22 05.70	17 35 29.3	.2295416	11 14.7
9	23 53 04.25	2 23 05.7	.1912743	10 43.1	25	03 27 02.87	17 55 48.2	.2300696	11 15.7
10	23 57 35.73	1 54 19.5	.1924297	10 43.7	26	03 32 01.15	18 15 39.4	.2305834	11 16.8
11	00 02 07.02	1 25 29.1	.1935714	10 44.3	27	03 37 00.55	18 35 02.1	.2310830	11 17.8
12	00 06 38.15	0 56 35.1	.1946992	10 44.9	28	03 42 01.06	18 53 55.6	.2315684	11 18.9
13	00 11 09.16	S. 0 27 38.2	.1958132	10 45.4	29	03 47 02.67	19 12 19.4	.2320397	11 20.0
14	00 15 40.08	N. 0 01 20.8	.1969131	10 46.0	30	03 52 05.39	19 30 12.7	.2324969	11 21.1
15	00 20 10.96	0 30 21.3	.1979991	10 46.6	31	03 57 09.21	19 47 34.9	.2329401	11 22.2
16	00 24 41.83	0 59 22.6	.1990710	10 47.2	June 1	04 02 14.13	20 04 25.2	.2333691	11 23.3
17	00 29 12.74	1 28 23.9	.2001289	10 47.7	2	04 07 20.12	20 20 43.2	.2337840	11 24.5
18	00 33 43.71	1 57 24.7	.2011726	10 48.3	3	04 12 27.18	20 36 28.2	.2341849	11 25.7
19	00 38 14.79	2 26 24.1	.2022022	10 48.9	4	04 17 35.29	20 51 39.5	.2345716	11 26.9
20	00 42 46.01	2 55 21.5	.2032176	10 49.4	5	04 22 44.43	21 06 16.5	.2349442	11 28.1
21	00 47 17.41	3 24 16.1	.2042189	10 50.0	6	04 27 54.59	21 20 18.7	.2353025	11 29.3
22	00 51 49.02	3 53 07.2	.2052062	10 50.6	7	04 33 05.74	21 33 45.5	.2356466	11 30.5
23	00 56 20.88	4 21 54.1	.2061795	10 51.2	8	04 38 17.85	21 46 36.4	.2359763	11 31.8
24	01 00 53.02	4 50 36.1	.2071389	10 51.8	9	04 43 30.89	21 58 50.7	.2362917	11 33.1
25	01 05 25.49	5 19 12.6	.2080845	10 52.4	10	04 48 44.84	22 10 28.0	.2365925	11 34.4
26	01 09 58.32	5 47 42.7	.2090164	10 53.0	11	04 53 59.66	22 21 27.8	.2368788	11 35.7
27	01 14 31.56	6 16 05.8	.2099347	10 53.6	12	04 59 15.32	22 31 49.6	.2371505	11 37.0
28	01 19 05.24	6 44 21.2	.2108394	10 54.2	13	05 04 31.78	22 41 32.9	.2374075	11 38.3
29	01 23 39.39	7 12 28.2	.2117305	10 54.9	14	05 09 48.98	22 50 37.3	.2376497	11 39.7
30	01 28 14.06	7 40 26.1	.2126081	10 55.5	15	05 15 06.90	22 59 02.4	.2378769	11 41.0
May 1	01 32 49.29	8 08 14.2	.2134723	10 56.1	16	05 20 25.48	23 06 47.7	.2380892	11 42.4
2	01 37 25.11	8 35 51.9	.2143230	10 56.8	17	05 25 44.68	23 13 52.8	.2382865	11 43.8
3	01 42 01.56	9 03 18.4	.2151603	10 57.4	18	05 31 04.44	23 20 17.5	.2384687	11 45.2
4	01 46 38.67	9 30 33.0	.2159840	10 58.1	19	05 36 24.71	23 26 01.4	.2386358	11 46.6
5	01 51 16.48	9 57 35.0	.2167943	10 58.8	20	05 41 45.42	23 31 04.2	.2387879	11 48.0
6	01 55 55.03	10 24 23.8	.2175910	10 59.5	21	05 47 06.54	23 35 25.6	.2389250	11 49.4
7	02 00 34.34	10 50 58.5	.2183741	11 00.2	22	05 52 28.00	23 39 05.4	.2390471	11 50.8
8	02 05 14.45	11 17 18.6	.2191435	11 00.9	23	05 57 49.75	23 42 03.5	.2391544	11 52.2
9	02 09 55.38	11 43 23.2	.2198993	11 01.7	24	06 03 11.73	23 44 19.6	.2392468	11 53.6
10	02 14 37.18	12 09 11.7	.2206413	11 02.4	25	06 08 33.89	23 45 53.6	.2393244	11 55.1
11	02 19 19.87	12 34 43.3	.2213695	11 03.2	26	06 13 56.16	23 46 45.4	.2393873	11 56.5
12	02 24 03.48	12 59 57.4	.2220837	11 04.0	27	06 19 18.49	23 46 55.0	.2394356	11 57.9
13	02 28 48.03	13 24 53.2	.2227840	11 04.8	28	06 24 40.81	23 46 22.3	.2394692	11 59.3
14	02 33 33.55	13 49 30.0	.2234702	11 05.6	29	06 30 03.08	23 45 07.3	.2394882	12 00.8
15	02 38 20.05	14 13 47.0	.2241422	11 06.4	30	06 35 25.23	23 43 10.0	.2394926	12 02.2
16	02 43 07.56	14 37 43.5	.2247998	11 07.3	July 1	06 40 47.21	23 40 30.4	.2394825	12 03.6
17	02 47 56.09	15 01 18.8	.2254431	11 08.2	2	06 46 08.97	23 37 08.7	.2394579	12 05.0
18	02 52 45.67	N. 15 24 32.1	0.2260719	11 09.0	3	06 51 30.45	N. 23 33 04.9	0.2394189	12 06.5

	H.P.	S.D.		H.P.	S.D.		H.P.	S.D.		H.P.	S.D.
	"	"		"	"		"	"		"	"
Apr. 2	05.78	05.52	Apr. 26	05.44	05.20	May 20	05.21	04.98	June 13	05.09	04.86
6	05.71	05.46	30	05.39	05.15	24	05.19	04.96	17	05.08	04.85
10	05.65	05.40	May 4	05.35	05.11	28	05.16	04.93	21	05.08	04.85
14	05.59	05.34	8	05.31	05.08	June 1	05.14	04.91	25	05.07	04.85
18	05.54	05.29	12	05.28	05.05	5	05.12	04.89	29	05.07	04.85
22	05.49	05.25	16	05.24	05.01	9	05.11	04.88	July 3	05.07	04.85

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
h m	h m s	° ' "		h m	h m	h m s	° ' "		h m
July 3	06 51 30.45	N. 23 33 04.9	0.2394189	12 06.5	Aug. 18	10 42 32.93	N. 9 44 07.2	0.2217839	12 56.2
4	06 54 51.50	23 28 19.1	.2393653	12 07.9	19	10 47 10.42	9 15 53.6	.2210612	12 56.9
5	06 58 12.33	23 22 51.6	.2392973	12 09.3	20	10 51 47.13	8 47 25.2	.2203241	12 57.5
6	07 01 32.61	23 16 42.5	.2392147	12 10.7	21	10 56 23.08	8 18 42.7	.2195728	12 58.2
7	07 04 52.46	23 09 52.0	.2391176	12 12.1	22	11 00 58.31	7 49 46.8	.2188073	12 58.8
8	07 08 11.76	23 02 20.5	.2390060	12 13.4	23	11 05 32.86	7 20 38.4	.2180277	12 59.4
9	07 11 30.45	22 55 08.1	.2388797	12 14.8	24	11 10 06.75	6 51 18.0	.2172340	13 00.1
10	07 14 48.51	22 47 15.3	.2387387	12 16.2	25	11 14 40.03	6 21 46.6	.2164264	13 00.7
11	07 18 05.88	22 39 42.2	.2385829	12 17.5	26	11 19 12.74	5 52 04.7	.2156049	13 01.3
12	07 21 22.52	22 32 29.3	.2384123	12 18.9	27	11 23 44.91	5 22 13.1	.2147696	13 01.9
13	07 24 38.39	22 24 37.0	.2382267	12 20.2	28	11 28 16.58	4 52 12.5	.2139207	13 02.5
14	07 27 53.44	22 16 05.6	.2380262	12 21.5	29	11 32 47.79	4 22 03.7	.2130581	13 03.1
15	07 31 07.64	22 07 55.5	.2378107	12 22.8	30	11 37 18.58	3 51 47.3	.2121819	13 03.6
16	07 34 20.95	21 9 07.3	.2375801	12 24.1	31	11 41 49.01	3 21 24.1	.2112922	13 04.2
17	07 37 33.32	21 01 41.4	.2373341	12 25.3	Sept. 1	11 46 19.10	2 50 54.8	.2103892	13 04.7
18	07 40 44.71	21 15 38.2	.2370730	12 26.6	2	11 50 48.90	2 20 20.1	.2094727	13 05.3
19	07 43 55.14	20 55 58.1	.2367978	12 27.8	3	11 55 18.46	1 49 40.7	.2085429	13 05.8
20	07 47 04.51	20 45 42.7	.2365070	12 29.0	4	11 59 47.83	1 18 57.2	.2075996	13 06.4
21	07 50 12.83	20 35 51.3	.2362012	12 30.2	5	12 04 17.04	0 48 10.4	.2066429	13 06.9
22	07 53 20.17	20 25 25.0	.2358805	12 31.4	6	12 08 46.14	N. 0 17 21.0	.2056728	13 07.5
23	07 56 26.51	20 15 24.2	.2355450	12 32.6	7	12 13 15.18	S. 0 13 30.3	.2046891	13 08.0
24	07 59 31.84	20 05 49.7	.2351948	12 33.7	8	12 17 44.19	0 44 22.9	.2036918	13 08.6
25	08 02 36.13	19 56 42.1	.2348300	12 34.8	9	12 22 13.22	1 15 15.9	.2026808	13 09.1
26	08 05 39.58	19 47 01.8	.2344505	12 35.9	10	12 26 42.31	1 46 08.6	.2016560	13 09.7
27	08 08 42.07	19 37 40.8	.2340565	12 37.0	11	12 31 11.51	2 17 00.4	.2006174	13 10.2
28	08 11 43.51	19 28 00.5	.2336481	12 38.1	12	12 35 40.86	2 47 50.4	.1995649	13 10.7
29	08 14 44.00	19 18 52.7	.2332253	12 39.1	13	12 40 10.39	3 18 38.0	.1984985	13 11.3
30	08 17 43.51	19 09 07.1	.2327881	12 40.1	14	12 44 40.15	3 49 22.4	.1974181	13 11.8
31	08 20 42.10	19 00 56.2	.2323367	12 41.2	15	12 49 10.17	4 20 02.9	.1963236	13 12.4
Aug. 1	08 23 39.06	18 52 14.8	.2318712	12 42.2	16	12 53 40.51	4 50 38.7	.1952152	13 13.0
2	08 26 34.57	18 43 05.5	.2313916	12 43.1	17	12 58 11.19	5 21 09.1	.1940928	13 13.5
3	08 29 29.04	18 33 20.1	.2308978	12 44.1	18	13 02 42.27	5 51 33.3	.1929564	13 14.1
4	08 32 22.36	18 23 46.3	.2303900	12 45.0	19	13 07 13.77	6 21 50.6	.1918061	13 14.7
5	08 35 14.56	18 14 25.7	.2298680	12 45.9	20	13 11 45.74	6 52 00.2	.1906418	13 15.3
6	08 38 05.61	18 04 04.0	.2293319	12 46.8	21	13 16 18.22	7 22 01.4	.1894637	13 15.9
7	08 40 55.40	17 53 40.8	.2287817	12 47.7	22	13 20 51.24	7 51 53.4	.1882717	13 16.5
8	08 43 44.85	17 43 01.3	.2282174	12 48.5	23	13 25 24.85	8 21 35.5	.1870658	13 17.1
9	08 46 32.91	17 32 49.5	.2276388	12 49.4	24	13 29 59.08	8 51 06.9	.1858461	13 17.7
10	08 49 20.22	17 22 33.0	.2270460	12 50.2	25	13 34 33.98	9 20 26.9	.1846128	13 18.4
11	08 52 06.02	17 12 44.8	.2264388	12 51.0	26	13 39 09.57	9 49 34.6	.1833658	13 19.0
12	08 54 50.81	17 02 35.8	.2258172	12 51.8	27	13 43 45.90	10 18 29.4	.1821052	13 19.7
13	08 57 34.61	16 52 06.8	.2251821	12 52.6	28	13 48 23.00	10 47 10.4	.1808311	13 20.4
14	08 60 17.40	16 41 18.5	.2245307	12 53.3	29	13 53 00.91	11 15 37.0	.1795435	13 21.1
15	08 63 00.41	16 30 11.6	.2238647	12 54.0	30	13 57 39.67	11 43 48.4	.1782424	13 21.8
16	08 65 42.40	16 19 46.9	.2231862	12 54.8	Oct. 1	14 02 19.31	12 11 43.8	.1769279	13 22.5
17	08 68 23.62	16 09 05.2	.2224923	12 55.5	2	14 06 59.87	12 39 22.5	.1756000	13 23.2
18	08 71 04.02	N. 9 44 07.2	0.2217839	12 56.2	3	14 11 41.38	S. 13 06 43.7	0.1742586	13 24.0
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July 3	05 27 04.85	July 27	05 13 04.90	Aug. 20	05 30 05.07	Sept. 13	05 57 05.32		
7	05 07 04.85	31	05 15 04.92	24	05 34 05.10	17	05 63 05.38		
11	05 08 04.85	Aug. 4	05 18 04.95	28	05 38 05.14	21	05 69 05.44		
15	05 09 04.86	8	05 20 04.97	Sept. 1	05 42 05.18	25	05 75 05.50		
19	05 10 04.87	12	05 23 05.00	5	05 47 05.23	29	05 82 05.56		
23	05 12 04.89	16	05 26 05.03	9	05 52 05.28	Oct. 3	05 89 05.63		

VENUS, 1928.

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Mean N. Ch.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Oct. 1	14 11 41.38	S. 13 06 43.7	0.1742586	13 24.0	Nov. 18	18 06 41.76	S. 25 16 21.5	0.0964542	14 17.7
4	14 16 23.87	13 33 46.7	.1729036	13 24.7	19	18 12 04.73	25 16 53.5	.0943752	14 19.2
5	14 21 07.38	14 00 30.7	.1715350	13 25.5	20	18 17 27.54	25 16 40.7	.0922772	14 20.6
6	14 25 51.93	14 26 55.0	.1701526	13 26.3	21	18 22 50.14	25 15 42.9	.0901602	14 22.0
7	14 30 37.54	14 52 58.7	.1687564	13 27.2	22	18 28 12.43	25 14 00.3	.0880239	14 23.5
8	14 35 24.25	15 18 41.1	.1673462	13 28.0	23	18 33 34.36	25 11 33.0	.0858683	14 24.9
9	14 40 12.08	15 44 01.5	.1659219	13 28.8	24	18 38 55.84	25 08 21.0	.0836934	14 26.3
10	14 45 01.05	16 08 59.0	.1644833	13 29.7	25	18 44 16.81	25 04 24.5	.0814990	14 27.7
11	14 49 51.17	16 33 32.8	.1630303	13 30.6	26	18 49 37.20	24 59 43.8	.0792850	14 29.1
12	14 54 42.45	16 57 42.1	.1615628	13 31.5	27	18 54 56.95	24 54 19.1	.0770514	14 30.5
13	14 59 34.92	17 21 26.2	.1600807	13 32.4	28	19 00 15.98	24 48 10.6	.0747980	14 31.9
14	15 04 28.58	17 44 44.2	.1585838	13 33.4	29	19 05 34.23	24 41 18.5	.0725247	14 33.2
15	15 09 23.44	18 07 35.4	.1570722	13 34.4	30	19 10 51.65	24 33 43.3	.0702314	14 34.6
16	15 14 19.51	18 29 59.0	.1555457	13 35.4	Dec. 1	19 16 08.18	24 25 25.3	.0679178	14 35.9
17	15 19 16.79	18 51 54.2	.1540043	13 36.4	2	19 21 23.77	24 16 24.8	.0655836	14 37.2
18	15 24 15.20	19 13 20.2	.1524479	13 37.4	3	19 26 38.34	24 06 42.3	.0632286	14 38.5
19	15 29 14.99	19 34 16.3	.1508764	13 38.5	4	19 31 51.86	23 56 18.2	.0608523	14 39.8
20	15 34 15.90	19 54 41.7	.1492899	13 39.6	5	19 37 04.28	23 45 12.9	.0584546	14 41.1
21	15 39 18.01	20 14 35.6	.1476882	13 40.7	6	19 42 15.53	23 33 26.9	.0560350	14 42.3
22	15 44 21.32	20 33 57.4	.1460713	13 41.8	7	19 47 25.57	23 21 00.8	.0535933	14 43.5
23	15 49 25.81	20 52 46.2	.1444393	13 42.9	8	19 52 34.35	23 07 55.1	.0511290	14 44.7
24	15 54 31.46	21 11 01.4	.1427920	13 44.0	9	19 57 41.83	22 54 10.3	.0486419	14 45.9
25	15 59 38.26	21 28 42.2	.1411295	13 45.2	10	20 02 47.97	22 39 47.1	.0461314	14 47.1
26	16 04 46.20	21 45 48.0	.1394518	13 46.4	11	20 07 52.71	22 24 46.1	.0435974	14 48.2
27	16 09 55.25	22 02 18.1	.1377590	13 47.6	12	20 12 56.02	22 09 07.8	.0410394	14 49.3
28	16 15 05.38	22 18 11.9	.1360510	13 48.9	13	20 17 57.87	21 52 52.9	.0384570	14 50.4
29	16 20 16.58	22 33 28.7	.1343278	13 50.1	14	20 22 58.23	21 36 02.1	.0358500	14 51.5
30	16 25 28.82	22 48 07.8	.1325894	13 51.4	15	20 27 57.05	21 18 36.1	.0332179	14 52.5
31	16 30 42.07	23 02 08.8	.1308357	13 52.6	16	20 32 54.31	21 00 35.5	.0305604	14 53.5
Nov. 1	16 35 56.30	23 15 30.9	.1290665	13 53.9	17	20 37 49.90	20 42 01.1	.0278773	14 54.5
2	16 41 11.47	23 28 13.8	.1272819	13 55.3	18	20 42 44.05	20 22 53.6	.0251680	14 55.4
3	16 46 27.54	23 40 16.7	.1254815	13 56.6	19	20 47 36.47	20 03 13.8	.0224325	14 56.4
4	16 51 44.47	23 51 39.3	.1236653	13 57.9	20	20 52 27.24	19 43 02.5	.0196703	14 57.3
5	16 57 02.22	24 02 20.9	.1218330	13 59.3	21	20 57 16.33	19 22 20.3	.0168812	14 58.1
6	17 02 20.74	24 12 21.2	.1199844	14 00.7	22	21 02 03.73	19 01 08.2	.0140650	14 59.0
7	17 07 39.98	24 21 39.6	.1181194	14 02.0	23	21 06 49.42	18 39 26.9	.0112214	14 59.8
8	17 12 59.88	24 30 15.8	.1162376	14 03.4	24	21 11 33.41	18 17 17.1	.0083501	15 00.6
9	17 18 20.39	24 38 09.4	.1143389	14 04.8	25	21 16 15.68	17 54 19.7	.0054511	15 01.3
10	17 23 41.45	24 45 20.0	.1124230	14 06.2	26	21 20 56.22	17 31 35.5	.0025239	15 02.1
11	17 29 03.00	24 51 47.2	.1104898	14 07.7	27	21 25 35.05	17 08 05.3	.9995685	15 02.8
12	17 34 24.97	24 57 30.7	.1085390	14 09.1	28	21 30 12.16	16 44 09.8	.9965846	15 03.5
13	17 39 47.29	25 02 30.2	.1065704	14 10.5	29	21 34 47.56	16 19 49.9	.9935717	15 04.1
14	17 45 09.89	25 06 45.6	.1045838	14 11.9	30	21 39 21.26	15 55 06.2	.9905295	15 04.7
15	17 50 32.71	25 10 16.5	.1025791	14 13.4	31	21 43 53.26	15 29 59.7	.9874577	15 05.3
16	17 55 55.68	25 13 02.9	.1005560	14 14.8	32	21 48 23.58	S. 15 04 31.1	.9843557	15 05.9
17	18 01 18.72	25 15 04.6	.0985144	14 16.3					
18	18 06 41.76	S. 25 16 21.5	0.0964542	14 17.7					

	H.P.	S.D.		H.P.	S.D.		H.P.	S.D.		H.P.	S.D.
	"	"		"	"		"	"		"	"
Oct. 3	05.89	05.63	Oct. 27	06.41	06.13	Nov. 20	07.12	06.80	Dec. 14	08.10	07.74
7	05.97	05.71	31	06.51	06.22	24	07.26	06.94	18	08.30	07.93
11	06.04	05.78	Nov. 4	06.62	06.33	28	07.41	07.08	22	08.52	08.14
15	06.13	05.86	8	06.73	06.43	Dec. 2	07.57	07.23	26	08.75	08.36
19	06.22	05.94	12	06.85	06.55	6	07.73	07.39	30	08.99	08.59
23	06.31	06.03	16	06.98	06.67	10	07.91	07.56	34	09.26	08.85

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Jan. 1	17 04 20.85	S. 23 06 35.4	0.3756196	10 24.6	Feb. 16	19 31 52.33	S. 22 34 15.0	0.3312513	09 51.0
2	17 07 17.55	23 11 17.4	.3747877	10 23.8	17	19 35 05.61	22 27 47.1	.3301701	09 50.2
3	17 10 25.63	23 15 45.9	.3739491	10 23.0	18	19 38 18.72	22 21 05.0	.3290847	09 49.5
4	17 13 32.15	23 20 00.8	.3731040	10 22.2	19	19 41 31.65	22 14 08.8	.3279952	09 48.8
5	17 16 42.41	23 24 02.0	.3722525	10 21.4	20	19 44 44.37	22 06 58.5	.3269015	09 48.0
6	17 19 52.13	23 27 49.4	.3713946	10 20.6	21	19 47 56.89	21 59 34.2	.3258038	09 47.3
7	17 23 01.61	23 31 23.0	.3705305	10 19.8	22	19 51 09.19	21 51 55.9	.3247021	09 46.6
8	17 26 11.57	23 34 42.7	.3696601	10 19.0	23	19 54 21.26	21 44 03.9	.3235966	09 45.8
9	17 29 21.50	23 37 48.4	.3687834	10 18.3	24	19 57 33.08	21 35 58.2	.3224875	09 45.1
10	17 32 32.35	23 40 40.0	.3679004	10 17.5	25	20 00 44.64	21 27 38.9	.3213748	09 44.3
11	17 35 43.21	23 43 17.4	.3670111	10 16.7	26	20 03 55.94	21 19 06.2	.3202587	09 43.6
12	17 38 54.38	23 45 40.5	.3661156	10 16.0	27	20 07 06.97	21 10 20.0	.3191392	09 42.8
13	17 42 05.85	23 47 49.3	.3652158	10 15.2	28	20 10 17.73	21 01 20.7	.3180167	09 42.1
14	17 45 17.59	23 49 43.6	.3643057	10 14.5	29	20 13 28.20	20 52 08.2	.3168912	09 41.3
15	17 48 29.60	23 51 23.5	.3633915	10 13.7	Mar. 1	20 16 38.38	20 42 42.7	.3157627	09 40.5
16	17 51 41.87	23 52 48.9	.3624711	10 13.0	2	20 19 48.26	20 33 04.3	.3146313	09 39.7
17	17 54 54.37	23 53 59.6	.3615445	10 12.2	3	20 22 57.84	20 23 13.2	.3134973	09 39.0
18	17 58 07.10	23 54 55.7	.3606118	10 11.5	4	20 26 07.12	20 13 09.4	.3123605	09 38.2
19	18 01 20.05	23 55 37.1	.3596730	10 10.8	5	20 29 16.10	20 02 53.0	.3112211	09 37.4
20	18 04 33.20	23 56 03.8	.3587281	10 10.1	6	20 32 24.76	19 52 24.2	.3100789	09 36.6
21	18 07 46.52	23 56 15.6	.3577772	10 09.4	7	20 35 33.10	19 41 43.2	.3089342	09 35.8
22	18 11 00.01	23 56 12.6	.3568203	10 08.7	8	20 38 41.12	19 30 50.1	.3077868	09 35.0
23	18 14 13.66	23 55 54.7	.3558577	10 08.0	9	20 41 48.82	19 19 45.0	.3066369	09 34.2
24	18 17 27.45	23 55 21.9	.3548893	10 07.3	10	20 44 56.19	19 08 28.0	.3054844	09 33.4
25	18 20 41.36	23 54 34.2	.3539152	10 06.5	11	20 48 03.23	18 56 59.4	.3043294	09 32.6
26	18 23 55.37	23 53 31.6	.3529354	10 05.8	12	20 51 09.94	18 45 19.1	.3031717	09 31.7
27	18 27 09.47	23 52 14.0	.3519503	10 05.1	13	20 54 16.30	18 33 27.4	.3020115	09 30.9
28	18 30 23.65	23 50 41.5	.3509598	10 04.4	14	20 57 22.31	18 21 24.4	.3008486	09 30.0
29	18 33 37.90	23 48 53.9	.3499641	10 03.7	15	21 00 27.98	18 09 10.4	.2996831	09 29.2
30	18 36 52.20	23 46 51.4	.3489633	10 03.0	16	21 03 33.30	17 56 45.3	.2985150	09 28.3
31	18 40 06.54	23 44 34.0	.3479577	10 02.3	17	21 06 38.25	17 44 09.4	.2973442	09 27.5
Feb. 1	18 43 20.91	23 42 01.5	.3469472	10 01.5	18	21 09 42.85	17 31 22.9	.2961708	09 26.6
2	18 46 35.30	23 39 14.1	.3459320	10 00.8	19	21 12 47.08	17 18 26.0	.2949949	09 25.7
3	18 49 49.70	23 36 11.7	.3449121	10 00.1	20	21 15 50.94	17 05 18.7	.2938166	09 24.8
4	18 53 04.00	23 32 54.4	.3438877	09 59.4	21	21 18 54.43	16 52 01.3	.2926358	09 24.0
5	18 56 18.47	23 29 22.2	.3428589	09 58.7	22	21 21 57.54	16 38 34.0	.2914526	09 23.1
6	18 59 32.82	23 25 35.2	.3418257	09 58.0	23	21 25 00.27	16 24 57.0	.2902671	09 22.2
7	19 02 47.13	23 21 33.3	.3407879	09 57.3	24	21 28 02.62	16 11 10.4	.2890795	09 21.3
8	19 06 01.40	23 17 16.6	.3397458	09 56.6	25	21 31 04.58	15 57 14.4	.2878898	09 20.4
9	19 09 15.61	23 12 45.1	.3386993	09 55.9	26	21 34 06.17	15 43 09.1	.2866982	09 19.5
10	19 12 29.74	23 07 58.0	.3376483	09 55.2	27	21 37 07.37	15 28 54.8	.2855048	09 18.6
11	19 15 43.78	23 02 58.4	.3365929	09 54.5	28	21 40 08.19	15 14 31.7	.2843097	09 17.6
12	19 18 57.73	22 57 42.5	.3355332	09 53.8	29	21 43 08.64	14 59 59.8	.2831130	09 16.7
13	19 22 11.58	22 52 12.3	.3344692	09 53.1	30	21 46 08.71	14 45 19.4	.2819148	09 15.7
14	19 25 25.30	22 46 27.7	.3334008	09 52.4	31	21 49 08.41	14 30 30.7	.2807152	09 14.8
15	19 28 38.89	22 40 28.5	.3323282	09 51.7	Apr. 1	21 52 07.75	14 15 33.8	.2795141	09 13.9
16	19 31 52.33	S. 22 34 15.0	0.3312513	09 51.0	2	21 55 06.72	S. 14 00 28.9	0.2783116	09 12.9

	Hor. Par.	Semidiameter.		Hor. Par.	Semidiameter.
January 1	3.70	1.97	February 20	4.14	2.20
11	3.78	2.01	March 1	4.25	2.26
21	3.86	2.05	11	4.37	2.33
31	3.95	2.10	21	4.49	2.39
February 10	4.04	2.15	31	4.61	2.46

MARS, 1928.

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Mars Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Apr. 2	21 55 06.72	S. 14 00 28.9	0.2783116	09 12.9	May 18	00 06 53.00	S. 0 55 27.1	0.2212841	08 23.4
3	21 58 05.33	13 45 16.1	.2771077	09 11.9	19	00 09 39.63	0 37 34.2	.2199996	08 22.2
4	22 01 03.59	13 29 55.7	.2759025	09 11.0	20	00 12 26.11	0 19 42.1	.2187125	08 21.0
5	22 04 01.49	13 14 27.8	.2746959	09 10.0	21	00 15 12.44	S. 0 01 51.1	.2174227	08 19.8
6	22 06 59.25	12 58 52.6	.2734878	09 09.0	22	00 17 58.64	N. 0 15 58.5	.2161302	08 18.7
7	22 09 56.27	12 43 10.2	.2722783	09 08.0	23	00 20 44.70	0 33 46.7	.2148351	08 17.5
8	22 12 53.14	12 27 20.8	.2710673	09 07.0	24	00 23 30.63	0 51 33.3	.2135374	08 16.3
9	22 15 49.68	12 11 24.7	.2698548	09 06.0	25	00 26 16.45	1 09 18.0	.2122372	08 15.1
10	22 18 45.89	11 55 21.9	.2686407	09 05.0	26	00 29 02.15	1 27 00.8	.2109343	08 14.0
11	22 21 41.76	11 39 12.7	.2674250	09 04.0	27	00 31 47.74	1 44 41.4	.2096288	08 12.8
12	22 24 37.31	11 22 57.3	.2662077	09 03.0	28	00 34 33.23	2 02 19.8	.2083206	08 11.6
13	22 27 32.53	11 06 35.8	.2649886	09 02.0	29	00 37 18.62	2 19 55.7	.2070096	08 10.4
14	22 30 27.43	10 50 08.5	.2637678	09 01.0	30	00 40 03.93	2 37 29.0	.2056957	08 09.3
15	22 33 22.01	10 33 35.5	.2625452	08 59.9	31	00 42 49.16	2 54 59.5	.2043788	08 08.1
16	22 36 16.27	10 16 57.1	.2613208	08 58.9	June 1	00 45 34.31	3 12 27.2	.2030588	08 06.9
17	22 39 10.23	10 00 13.4	.2600945	08 57.8	2	00 48 19.40	3 29 51.9	.2017356	08 05.7
18	22 42 03.87	9 43 24.6	.2588663	08 56.8	3	00 51 04.41	3 47 13.3	.2004090	08 04.5
19	22 44 57.20	9 26 31.0	.2576364	08 55.7	4	00 53 49.37	4 04 31.3	.1990789	08 03.3
20	22 47 50.22	9 09 32.7	.2564046	08 54.7	5	00 56 34.27	4 21 45.8	.1977452	08 02.1
21	22 50 42.93	8 52 30.0	.2551711	08 53.6	6	00 59 19.12	4 38 56.6	.1964077	08 00.9
22	22 53 35.34	8 35 23.0	.2539360	08 52.5	7	01 02 03.93	4 56 03.6	.1950662	07 59.7
23	22 56 27.45	8 18 12.0	.2526993	08 51.5	8	01 04 48.69	5 13 06.7	.1937205	07 58.5
24	22 59 19.27	8 00 57.1	.2514612	08 50.4	9	01 07 33.42	5 30 05.6	.1923704	07 57.3
25	23 02 10.81	7 43 38.5	.2502217	08 49.3	10	01 10 18.10	5 47 00.1	.1910158	07 56.1
26	23 05 02.06	7 26 16.5	.2489808	08 48.2	11	01 13 02.75	6 03 50.2	.1896563	07 54.9
27	23 07 53.05	7 08 51.2	.2477386	08 47.1	12	01 15 47.36	6 20 35.7	.1882919	07 53.7
28	23 10 43.76	6 51 22.7	.2464953	08 46.0	13	01 18 31.93	6 37 16.3	.1869224	07 52.5
29	23 13 34.22	6 33 51.3	.2452507	08 44.9	14	01 21 16.47	6 53 51.9	.1855478	07 51.3
30	23 16 24.43	6 16 17.1	.2440048	08 43.8	15	01 24 00.96	7 10 22.4	.1841677	07 50.1
May 1	23 19 14.59	5 58 40.2	.2427577	08 42.7	16	01 26 45.41	7 26 47.4	.1827822	07 48.9
2	23 22 04.12	5 41 01.0	.2415092	08 41.6	17	01 29 29.83	7 43 07.0	.1813912	07 47.7
3	23 24 53.62	5 23 19.5	.2402592	08 40.5	18	01 32 14.20	7 59 20.9	.1799948	07 46.5
4	23 27 42.90	5 05 35.9	.2390078	08 39.4	19	01 34 58.53	8 15 29.0	.1785927	07 45.3
5	23 30 31.97	4 47 50.4	.2377549	08 38.2	20	01 37 42.82	8 31 31.2	.1771850	07 44.1
6	23 33 20.82	4 30 03.2	.2365004	08 37.1	21	01 40 27.07	8 47 27.2	.1757716	07 42.9
7	23 36 09.48	4 12 14.5	.2352442	08 36.0	22	01 43 11.28	9 03 17.0	.1743526	07 41.7
8	23 38 57.95	3 54 24.3	.2339862	08 34.9	23	01 45 55.45	9 19 00.3	.1729278	07 40.5
9	23 41 46.23	3 36 32.9	.2327263	08 33.7	24	01 48 39.59	9 34 37.2	.1714973	07 39.3
10	23 44 34.32	3 18 40.5	.2314644	08 32.6	25	01 51 23.70	9 50 07.4	.1700610	07 38.1
11	23 47 22.23	3 00 47.2	.2302004	08 31.4	26	01 54 07.77	10 05 30.9	.1686186	07 36.9
12	23 50 09.97	2 42 53.3	.2289341	08 30.3	27	01 56 51.81	10 20 47.5	.1671702	07 35.7
13	23 52 57.54	2 24 59.0	.2276656	08 29.1	28	01 59 35.82	10 35 57.1	.1657155	07 34.5
14	23 55 44.95	2 07 04.3	.2263945	08 28.0	29	02 02 19.81	10 50 59.7	.1642543	07 33.3
15	23 58 32.20	1 49 09.6	.2251209	08 26.8	30	02 05 03.78	11 05 55.0	.1627866	07 32.1
16	00 01 19.29	1 31 15.0	.2238447	08 25.7	July 1	02 07 47.72	11 20 43.0	.1613120	07 30.9
17	00 04 06.22	1 13 20.8	.2225658	08 24.5	2	02 10 31.63	11 35 23.6	.1598303	07 29.6
18	00 06 53.00	S. 0 55 27.1	0.2212841	08 23.4	3	02 13 15.51	N. 11 49 56.7	0.1583415	07 28.4

		Hor. Par.	Semidiameter.			Hor. Par.	Semidiameter.
		"	"			"	"
April	10	4.74	2.52	May	30	5.48	2.91
	20	4.88	2.59	June	9	5.65	3.00
	30	5.02	2.67		19	5.83	3.10
May	10	5.16	2.75		29	6.03	3.21
	20	5.32	2.83	July	9	6.24	3.32

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
July 3	02 13 15.51	N. 11 49 56.7	0.1583415	07 28.4	Aug. 18	04 16 38.14	N. 20 17 34.8	0.0786355	06 30.6
4	02 15 59.37	12 04 22.2	0.1568452	07 27.2	19	04 19 12.38	20 24 47.2	0.0765844	06 29.2
5	02 18 43.25	12 18 30.9	0.1553412	07 26.0	20	04 21 46.10	20 31 49.7	0.0745167	06 27.8
6	02 21 27.00	12 32 49.8	0.1538294	07 24.8	21	04 24 19.29	20 38 42.5	0.0724324	06 26.4
7	02 24 10.77	12 46 51.7	0.1523094	07 23.6	22	04 26 51.94	20 45 25.5	0.0703312	06 25.0
8	02 26 54.57	13 02 45.5	0.1507809	07 22.4	23	04 29 24.02	20 51 58.8	0.0682130	06 23.6
9	02 29 38.15	13 14 31.1	0.1492436	07 21.2	24	04 31 55.52	20 58 22.5	0.0660776	06 22.2
10	02 32 21.81	13 28 08.4	0.1476973	07 19.9	25	04 34 26.42	21 04 36.7	0.0639248	06 20.8
11	02 35 05.39	13 41 37.3	0.1461419	07 18.7	26	04 36 56.71	21 10 41.4	0.0617543	06 19.3
12	02 37 48.90	13 54 57.7	0.1445770	07 17.5	27	04 39 26.37	21 16 36.7	0.0595659	06 17.9
13	02 40 32.34	14 08 09.4	0.1430026	07 16.3	28	04 41 55.37	21 22 22.7	0.0573594	06 16.4
14	02 43 15.70	14 21 12.3	0.1414183	07 15.1	29	04 44 23.71	21 27 59.5	0.0551347	06 15.0
15	02 45 58.97	14 34 06.4	0.1398241	07 13.8	30	04 46 51.37	21 33 27.3	0.0528914	06 13.5
16	02 48 42.14	14 46 51.4	0.1382190	07 12.6	31	04 49 18.32	21 38 46.0	0.0506290	06 12.0
17	02 51 25.21	14 59 27.3	0.1366055	07 11.4	S. pl. 1	04 51 44.55	21 43 55.9	0.0483473	06 10.5
18	02 54 08.16	15 11 54.1	0.1349810	07 10.2	2	04 54 10.03	21 48 56.9	0.0460458	06 09.0
19	02 56 50.98	15 24 11.0	0.1333461	07 08.9	3	04 56 34.75	21 53 49.3	0.0437243	06 07.5
20	02 59 33.67	15 36 19.7	0.1317010	07 07.7	4	04 58 58.67	21 58 33.0	0.0413824	06 05.9
21	03 02 16.23	15 48 18.4	0.1300455	07 06.5	5	05 01 21.77	22 03 08.2	0.0390198	06 04.4
22	03 04 58.64	16 00 07.7	0.1283796	07 05.3	6	05 03 44.01	22 07 35.1	0.0366364	06 02.8
23	03 07 40.91	16 11 47.5	0.1267029	07 04.0	7	05 06 05.37	22 11 53.6	0.0342318	06 01.2
24	03 10 23.03	16 23 17.7	0.1250156	07 02.8	8	05 08 25.82	22 16 04.0	0.0318058	05 59.6
25	03 13 04.98	16 34 38.3	0.1233172	07 01.5	9	05 10 45.34	22 20 06.3	0.0293583	05 58.0
26	03 15 46.76	16 45 49.3	0.1216078	07 00.3	10	05 13 03.89	22 24 00.7	0.0268892	05 56.4
27	03 18 28.37	16 56 50.6	0.1198869	06 59.0	11	05 15 21.44	22 27 47.3	0.0243983	05 54.7
28	03 21 09.87	17 07 42.2	0.1181541	06 57.8	12	05 17 37.95	22 31 26.3	0.0218857	05 53.1
29	03 23 51.04	17 18 21.0	0.1164101	06 56.6	13	05 19 53.41	22 34 57.8	0.0193513	05 51.4
30	03 26 32.06	17 28 58.3	0.1146542	06 55.3	14	05 22 07.78	22 38 22.0	0.0167951	05 49.7
31	03 29 12.92	17 39 18.3	0.1128859	06 54.0	15	05 24 21.03	22 41 39.1	0.0142171	05 48.0
Aug. 1	3 31 53.55	17 49 30.7	0.1111019	06 52.8	16	05 26 33.14	22 44 49.2	0.0116172	05 46.3
2	03 34 33.95	17 59 33.3	0.1093112	06 51.5	17	05 28 44.08	22 47 52.5	0.0089956	05 44.5
3	03 37 14.11	18 09 25.0	0.1075044	06 50.2	18	05 30 53.82	22 50 49.3	0.0063521	05 42.7
4	03 39 54.02	18 19 08.6	0.1056841	06 48.9	19	05 33 02.33	22 53 39.6	0.0036869	05 40.9
5	03 42 33.68	18 28 41.4	0.1038502	06 47.7	20	05 35 09.59	22 56 23.7	0.0009997	05 39.1
6	03 45 13.07	18 38 04.2	0.1020021	06 46.4	21	05 37 15.58	22 59 01.8	9.9982906	05 37.3
7	03 47 52.17	18 47 17	0.1001396	06 45.1	22	05 39 20.25	23 01 34.1	9.9955595	05 35.4
8	03 50 31.06	18 56 10.8	0.0982625	06 43.8	23	05 41 23.59	23 04 00.8	9.9928065	05 33.5
9	03 53 09.43	19 05 12.6	0.0963702	06 42.5	24	05 43 25.57	23 06 22.2	9.9900314	05 31.6
10	03 55 47.57	19 13 55.3	0.0944628	06 41.2	25	05 45 26.16	23 08 38.4	9.9872341	05 29.7
11	03 58 25.34	19 22 28.7	0.0925349	06 39.9	26	05 47 25.33	23 10 49.6	9.9844146	05 27.8
12	04 01 02.74	19 31 00.6	0.0906015	06 38.6	27	05 49 23.04	23 12 56.1	9.9815729	05 25.8
13	04 03 39.74	19 39 31.1	0.0886473	06 37.2	28	05 51 19.27	23 14 58.1	9.9787086	05 23.8
14	04 06 16.32	19 47 05.5	0.0866771	06 35.9	29	05 53 13.98	23 16 55.8	9.9758218	05 21.8
15	04 08 52.47	19 54 57.9	0.0846909	06 34.6	30	05 55 07.14	23 18 49.4	9.9729125	05 19.7
16	04 11 28.17	20 02 40.2	0.0826887	06 33.3	Oct. 1	05 56 58.72	23 20 39.3	9.9699803	05 17.7
17	04 14 03.40	20 10 12.5	0.0806702	06 31.9	2	05 58 48.67	23 22 25.5	9.9670252	05 15.6
18	04 16 38.14	20 17 34.8	0.0786355	06 30.6	3	06 00 36.94	23 24 08.3	9.9640474	05 13.4

		Hor. Par	Semidiameter.		Hor. Par.	Semidiameter.	
		"	"		"	"	
July	10	6.47	3.44	September	7	8.13	4.33
	29	6.73	3.58		17	8.62	4.58
August	8	7.02	3.73		27	9.18	4.88
	18	7.34	3.90	October	7	9.83	5.23
	28	7.71	4.10		17	10.58	5.63

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Ver. No.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Oct. 3	06 00 36.94	N.23 24 08.3	9.9640474	05 13.4	Nov. 18	06 39 43.10	N.24 53 41.0	9.8142505	02 52.2
4	05 02 23.50	23 25 47.9	.9610467	05 11.3	19	06 39 18.06	24 57 02.8	.8112983	02 47.9
5	04 04 08.30	23 27 24.7	.9580232	05 09.1	20	06 38 49.19	25 00 28.7	.8084038	02 43.5
6	06 05 51.20	23 28 58.8	.9549771	05 06.9	21	06 38 16.48	25 03 58.3	.8055711	02 39.1
7	06 07 32.43	23 30 30.5	.9519088	05 04.7	22	06 37 39.95	25 07 31.4	.8028042	02 34.6
8	06 09 11.67	23 32 00.1	.9488183	05 02.4	23	06 36 59.61	25 11 07.5	.8001072	02 30.0
9	06 10 48.95	23 33 27.8	.9457061	05 00.1	24	06 36 15.49	25 14 46.4	.7974844	02 25.3
10	06 12 24.24	23 34 53.8	.9425728	04 57.7	25	06 35 27.61	25 18 27.7	.7949398	02 20.6
11	06 13 57.49	23 36 18.5	.9394188	04 55.3	26	06 34 36.02	25 22 10.9	.7924776	02 15.9
12	06 15 28.65	23 37 42.1	.9362447	04 52.9	27	06 33 40.74	25 25 55.5	.7901022	02 11.1
13	06 16 57.66	23 39 04.8	.9330510	04 50.5	28	06 32 41.81	25 29 41.0	.7878180	02 06.2
14	06 18 24.49	23 40 26.9	.9298385	04 48.0	29	06 31 39.30	25 33 27.0	.7856292	02 01.2
15	06 19 49.09	23 41 48.8	.9266078	04 45.5	30	06 30 33.27	25 37 13.0	.7835403	01 56.2
16	06 21 11.42	23 43 10.7	.9233597	04 43.0	Dec. 1	06 29 23.78	25 40 58.3	.7815559	01 51.2
17	06 22 31.42	23 44 32.9	.9200948	04 40.4	2	06 28 10.93	25 44 42.3	.7796807	01 46.1
18	06 23 49.06	23 45 55.6	.9168140	04 37.7	3	06 26 54.80	25 48 24.5	.7779192	01 40.9
19	06 25 04.29	23 47 19.1	.9135183	04 35.1	4	06 25 35.50	25 52 04.4	.7762761	01 35.7
20	06 26 17.07	23 48 43.7	.9102082	04 32.4	5	06 24 13.16	25 55 41.2	.7747558	01 30.4
21	06 27 27.33	23 50 09.8	.9068848	04 29.6	6	06 22 47.92	25 59 14.4	.7733625	01 25.1
22	06 28 35.05	23 51 37.5	.9035491	04 26.8	7	06 21 19.91	26 02 43.3	.7721004	01 19.7
23	06 29 40.17	23 53 07.1	.9002018	04 24.0	8	06 19 49.29	26 06 07.5	.7709736	01 14.3
24	06 30 42.64	23 54 38.7	.8968441	04 21.1	9	06 18 16.25	26 09 26.2	.7699856	01 08.8
25	06 31 42.41	23 56 12.8	.8934771	04 18.1	10	06 16 40.96	26 12 39.0	.7691398	01 03.3
26	06 32 39.44	23 57 49.5	.8901018	04 15.2	11	06 15 03.62	26 15 45.3	.7684393	00 57.8
27	06 33 33.67	23 59 29.0	.8867192	04 12.2	12	06 13 24.43	26 18 44.5	.7678872	00 52.3
28	06 34 25.05	24 01 11.6	.8833306	04 09.1	13	06 11 43.60	26 21 36.2	.7674857	00 46.7
29	06 35 13.53	24 02 57.5	.8799372	04 06.0	14	06 10 01.35	26 24 20.0	.7672370	00 41.1
30	06 35 59.04	24 04 47.0	.8765404	04 02.8	15	06 08 17.91	26 26 55.4	.7671427	00 35.4
31	06 36 41.52	24 06 40.1	.8731416	03 59.6	16	06 06 33.49	26 29 22.1	.7672043	00 29.8
Nov. 1	06 37 20.92	24 08 37.1	.8697425	03 56.4	17	06 04 48.34	26 31 39.8	.7674225	00 24.1
2	06 37 57.17	24 10 38.2	.8663447	03 53.1	18	06 03 02.70	26 33 48.3	.7677979	00 18.4
3	06 38 30.19	24 12 43.6	.8629503	03 49.7	19	06 01 16.79	26 35 47.3	.7683305	00 12.7
4	06 38 59.95	24 14 53.4	.8595614	03 46.3	20	05 59 30.85	26 37 36.7	.7690202	00 07.1
5	06 39 26.36	24 17 07.8	.8561804	03 42.8	21	05 57 45.13	26 39 16.4	.7698662	00 01.4
6	06 39 49.36	24 19 26.9	.8528096	03 39.3	22	05 55 59.83	26 40 46.3	.7708672	23 50.0
7	06 40 08.91	24 21 50.9	.8494518	03 35.7	23	05 54 15.19	26 42 06.5	.7720219	23 44.4
8	06 40 24.95	24 24 19.7	.8461096	03 32.0	24	05 52 31.44	26 43 17.0	.7733285	23 38.7
9	06 40 37.43	24 26 53.5	.8427861	03 28.3	25	05 50 48.76	26 44 17.9	.7747850	23 33.1
10	06 40 46.30	24 29 32.3	.8394843	03 24.5	26	05 49 07.36	26 45 09.5	.7763890	23 27.5
11	06 40 51.53	24 32 16.1	.8362074	03 20.7	27	05 47 27.45	26 45 51.8	.7781381	23 21.9
12	06 40 53.07	24 35 05.0	.8329585	03 16.8	28	05 45 49.20	26 46 25.1	.7800293	23 16.4
13	06 40 50.88	24 37 59.0	.8297410	03 12.9	29	05 44 12.80	26 46 49.7	.7820599	23 10.9
14	06 40 44.93	24 40 57.9	.8265584	03 08.9	30	05 42 38.43	26 47 05.9	.7842270	23 05.4
15	06 40 35.20	24 44 01.6	.8234143	03 04.8	31	05 41 06.25	26 47 14.1	.7865272	23 00.0
16	06 40 21.66	24 47 10.2	.8203124	03 00.7	32	05 39 36.43	N.26 47 14.7	9.7889574	22 54.6
17	06 40 04.30	24 50 23.4	.8172565	02 56.5					
18	06 39 43.10	N.24 53 41.0	9.8142505	02 52.2					

	Hor. Par.	Semidiameter.		Hor. Par.	Semidiameter.
	"	"		"	"
October 27	11.42	6.07	December 6	14.83	7.89
November 6	12.35	6.57	16	15.04	8.00
16	13.31	7.08	26	14.73	7.84
26	14.19	7.55	36	13.95	7.42

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Mo. & No.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Jan. 1	23 19 31.92	S. 2 31 22.3	0.7062689	17 09.2	Feb. 16	00 19 37.36	N. 0 53 05.0	0.7550344	14 38.3
2	23 50 01.09	2 27 57.9	.7075837	17 05.7	17	00 20 24.77	0 58 20.1	.7557869	14 35.2
3	23 50 52.81	2 24 30.1	.7088893	17 02.3	18	00 21 12.44	1 03 36.6	.7565253	14 32.0
4	23 51 01.07	2 20 58.9	.7101858	16 58.9	19	00 22 00.35	1 08 54.4	.7572492	14 28.9
5	23 51 31.86	2 17 24.4	.7114729	16 55.4	20	00 22 48.50	1 14 13.6	.7579588	14 25.8
6	23 52 03.18	2 13 46.5	.7127505	16 52.0	21	00 23 36.89	1 19 33.9	.7586537	14 22.6
7	23 52 35.02	2 10 05.4	.7140183	16 48.6	22	00 24 25.51	1 24 55.5	.7593340	14 19.5
8	23 53 07.36	2 06 21.1	.7152762	16 45.2	23	00 25 14.35	1 30 18.1	.7599997	14 16.4
9	23 53 40.21	2 02 33.6	.7165241	16 41.9	24	00 26 03.41	1 35 41.9	.7606508	14 13.3
10	23 54 13.56	1 58 43.0	.7177617	16 38.5	25	00 26 52.68	1 41 06.7	.7612872	14 10.2
11	23 54 47.41	1 54 49.3	.7189589	16 35.1	26	00 27 42.16	1 46 32.5	.7619089	14 07.0
12	23 55 21.73	1 50 52.6	.7202055	16 31.8	27	00 28 31.83	1 51 59.3	.7625160	14 03.9
13	23 55 56.54	1 46 52.9	.7214115	16 28.4	28	00 29 21.69	1 57 26.9	.7631083	14 00.8
14	23 56 31.82	1 42 50.3	.7226066	16 25.1	29	00 30 11.74	2 02 55.5	.7636860	13 57.7
15	23 57 07.57	1 38 44.7	.7237906	16 21.7	Mar. 1	00 31 01.97	2 08 24.8	.7642490	13 54.6
16	23 57 43.77	1 34 36.3	.7249632	16 18.4	2	00 31 52.38	2 13 55.0	.7647972	13 51.5
17	23 58 20.43	1 30 25.1	.7261245	16 15.1	3	00 32 42.96	2 19 25.8	.7653308	13 48.4
18	23 58 57.54	1 26 11.0	.7272742	16 11.7	4	00 33 33.71	2 24 57.4	.7658497	13 45.3
19	23 59 35.09	1 21 54.3	.7284121	16 08.4	5	00 34 24.62	2 30 29.6	.7663539	13 42.3
20	00 00 13.07	1 17 34.9	.7295382	16 05.1	6	00 35 15.69	2 36 02.5	.7668434	13 39.2
21	00 00 51.48	1 13 12.9	.7306523	16 01.8	7	00 36 06.92	2 41 36.0	.7673182	13 36.1
22	00 01 30.32	1 08 48.2	.7317542	15 58.6	8	00 36 58.29	2 47 10.0	.7677784	13 33.0
23	00 02 09.56	1 04 21.1	.7328438	15 55.3	9	00 37 49.81	2 52 44.6	.7682239	13 29.9
24	00 02 49.21	0 59 51.4	.7339208	15 52.0	10	00 38 41.48	2 58 19.6	.7686548	13 26.8
25	00 03 29.26	0 55 19.3	.7349851	15 48.7	11	00 39 33.28	3 03 55.1	.7690709	13 23.8
26	00 04 09.71	0 50 44.8	.7360366	15 45.5	12	00 40 25.21	3 09 31.1	.7694723	13 20.7
27	00 04 50.53	0 46 07.9	.7370753	15 42.2	13	00 41 17.28	3 15 07.4	.7698590	13 17.6
28	00 05 31.73	0 41 28.8	.7381010	15 39.0	14	00 42 09.47	3 20 44.1	.7702309	13 14.6
29	00 06 13.30	0 36 47.4	.7391137	15 35.7	15	00 43 01.78	3 26 21.1	.7705879	13 11.5
30	00 06 55.23	0 32 03.9	.7401132	15 32.5	16	00 43 54.20	3 31 58.3	.7709301	13 08.4
31	00 07 37.52	0 27 18.2	.7410995	15 29.3	17	00 44 46.74	3 37 35.8	.7712575	13 05.4
Feb. 1	00 08 20.15	0 22 30.5	.7420725	15 26.0	18	00 45 39.39	3 43 13.6	.7715699	13 02.3
2	00 09 03.13	0 17 40.7	.7430321	15 22.8	19	00 46 32.14	3 48 51.5	.7718675	12 59.3
3	00 09 46.44	0 12 49.0	.7439783	15 19.6	20	00 47 24.98	3 54 29.5	.7721501	12 56.2
4	00 10 30.08	0 07 55.3	.7449110	15 16.4	21	00 48 17.92	4 00 07.6	.7724178	12 53.2
5	00 11 14.04	S. 00 2 59.7	.7458302	15 13.2	22	00 49 10.94	4 05 45.8	.7726705	12 50.1
6	00 11 58.32	N. 00 01 57.7	.7467358	15 10.0	23	00 50 04.05	4 11 24.0	.7729083	12 47.1
7	00 12 42.91	0 06 57.0	.7476278	15 06.8	24	00 50 57.23	4 17 02.2	.7731311	12 44.0
8	00 13 27.80	0 11 58.0	.7485062	15 03.6	25	00 51 50.48	4 22 40.3	.7733390	12 41.0
9	00 14 13.00	0 17 00.7	.7493709	15 00.5	26	00 52 43.80	4 28 18.3	.7735320	12 37.9
10	00 14 58.49	0 22 05.2	.7502219	14 57.3	27	00 53 37.18	4 33 56.2	.7737101	12 34.9
11	00 15 44.27	0 27 11.3	.7510590	14 54.1	28	00 54 30.62	4 39 33.8	.7738735	12 31.8
12	00 16 30.34	0 32 19.0	.7518822	14 50.9	29	00 55 24.11	4 45 11.2	.7740220	12 28.8
13	00 17 16.69	0 37 28.2	.7526914	14 47.8	30	00 56 17.65	4 50 48.3	.7741557	12 25.7
14	00 18 03.32	0 42 39.0	.7534865	14 44.6	31	00 57 11.23	4 56 25.2	.7742747	12 22.7
15	00 18 50.21	0 47 51.3	.7542675	14 41.5	Apr. 1	00 58 04.85	5 02 01.7	.7743789	12 19.6
16	00 19 37.16	N. 0 53 05.0	0.7550344	14 38.3	2	00 58 58.51	N. 5 07 37.9	0.7744684	12 16.6

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
		"	"			"	"
January	1	1.73	18.08	February	20	1.54	16.05
	11	1.68	17.55	March	1	1.51	15.82
	21	1.64	17.09		11	1.50	15.64
	31	1.60	16.69		21	1.49	15.52
February	10	1.57	16.33		31	1.48	15.46

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Time	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Apr. 2	00 58 58.51	N. 5 07 37.9	0.7744684	12 16.6	May 18	01 39 34.97	N. 9 10 10.8	0.7629408	09 56.2
3	00 59 52.20	5 13 13.6	.7745432	12 13.6	19	01 40 25.61	9 14 56.3	.7623581	09 53.1
4	01 00 45.92	5 18 49.0	.7746034	12 10.5	20	01 41 16.07	9 19 40.1	.7617617	09 50.0
5	01 01 39.66	5 24 23.9	.7746489	12 07.5	21	01 42 06.36	9 24 22.1	.7611515	09 46.9
6	01 02 33.42	5 29 58.3	.7746799	12 04.5	22	01 42 56.45	9 29 02.3	.7605277	09 43.8
7	01 03 27.21	5 35 32.3	.7746963	12 01.4	23	01 43 46.36	9 33 40.6	.7598904	09 40.7
8	01 04 21.00	5 41 05.7	.7746981	11 58.4	24	01 44 36.07	9 38 17.1	.7592395	09 37.6
9	01 05 14.81	5 46 38.5	.7746854	11 55.3	25	01 45 25.58	9 42 51.6	.7585753	09 34.5
10	01 06 08.62	5 52 10.8	.7746580	11 52.3	26	01 46 14.88	9 47 24.3	.7578977	09 31.3
11	01 07 02.44	5 57 42.4	.7746161	11 49.3	27	01 47 03.97	9 51 54.9	.7572068	09 28.2
12	01 07 56.25	6 03 13.4	.7745596	11 46.2	28	01 47 52.85	9 56 23.6	.7565028	09 25.1
13	01 08 50.06	6 08 43.7	.7744884	11 43.2	29	01 48 41.50	10 00 50.4	.7557857	09 22.0
14	01 09 43.86	6 14 13.3	.7744026	11 40.1	30	01 49 29.93	10 05 15.1	.7550555	09 18.8
15	01 10 37.65	6 19 42.2	.7743022	11 37.1	31	01 50 18.13	10 09 37.7	.7543123	09 15.7
16	01 11 31.42	6 25 10.2	.7741872	11 34.0	June 1	01 51 06.09	10 13 58.3	.7535561	09 12.6
17	01 12 25.17	6 30 37.5	.7740575	11 31.0	2	01 51 53.82	10 18 16.8	.7527869	09 09.4
18	01 13 18.89	6 36 03.9	.7739132	11 28.0	3	01 52 41.30	10 22 33.3	.7520049	09 06.3
19	01 14 12.58	6 41 29.5	.7737544	11 24.9	4	01 53 28.53	10 26 47.6	.7512100	09 03.2
20	01 15 06.23	6 46 54.1	.7735809	11 21.9	5	01 54 15.51	10 30 59.8	.7504024	09 00.0
21	01 15 59.83	6 52 17.8	.7733929	11 18.8	6	01 55 02.23	10 35 09.9	.7495820	08 56.8
22	01 16 53.39	6 57 40.5	.7731903	11 15.8	7	01 55 48.68	10 39 17.8	.7487489	08 53.7
23	01 17 46.90	7 03 02.2	.7729731	11 12.8	8	01 56 34.86	10 43 23.4	.7479031	08 50.5
24	01 18 40.31	7 08 22.9	.7727415	11 09.7	9	01 57 20.77	10 47 26.9	.7470447	08 47.3
25	01 19 33.73	7 13 42.4	.7724954	11 06.7	10	01 58 06.39	10 51 28.1	.7461736	08 44.2
26	01 20 27.05	7 19 00.8	.7722350	11 03.6	11	01 58 51.73	10 55 27.0	.7452900	08 41.0
27	01 21 20.30	7 24 18.0	.7719602	11 00.6	12	01 59 36.77	10 59 23.7	.7443939	08 37.8
28	01 22 13.46	7 29 34.1	.7716712	10 57.5	13	02 00 21.52	11 03 18.1	.7434852	08 34.6
29	01 23 06.55	7 34 49.0	.7713679	10 54.5	14	02 01 05.95	11 07 10.1	.7425642	08 31.4
30	01 23 59.56	7 40 02.7	.7710505	10 51.4	15	02 01 50.07	11 10 59.7	.7416309	08 28.2
May 1	01 24 52.47	7 45 15.1	.7707189	10 48.3	16	02 02 33.86	11 14 46.9	.7406853	08 25.0
2	01 25 45.30	7 50 26.2	.7703732	10 45.3	17	02 03 17.32	11 18 31.7	.7397276	08 21.8
3	01 26 38.04	7 55 36.0	.7700135	10 42.2	18	02 04 00.45	11 22 13.9	.7387579	08 18.6
4	01 27 30.68	8 00 44.5	.7696398	10 39.2	19	02 04 43.24	11 25 53.7	.7377762	08 15.4
5	01 28 23.22	8 05 51.7	.7692520	10 36.1	20	02 05 25.67	11 29 31.0	.7367828	08 12.1
6	01 29 15.65	8 10 57.5	.7688502	10 33.1	21	02 06 07.75	11 33 05.7	.7357776	08 08.9
7	01 30 07.97	8 16 01.9	.7684345	10 30.0	22	02 06 49.46	11 36 37.9	.7347608	08 05.6
8	01 31 00.18	8 21 04.9	.7680047	10 26.9	23	02 07 30.81	11 40 07.4	.7337326	08 02.4
9	01 31 52.26	8 26 06.4	.7675610	10 23.9	24	02 08 11.78	11 43 34.4	.7326930	07 59.1
10	01 32 44.23	8 31 06.5	.7671033	10 20.8	25	02 08 52.37	11 46 58.8	.7316423	07 55.9
11	01 33 36.06	8 36 05.0	.7666316	10 17.7	26	02 09 32.58	11 50 20.5	.7305806	07 52.6
12	01 34 27.77	8 41 02.0	.7661460	10 14.7	27	02 10 12.40	11 53 39.6	.7295079	07 49.4
13	01 35 19.34	8 45 57.5	.7656466	10 11.6	28	02 10 51.81	11 56 56.0	.7284243	07 46.1
14	01 36 10.77	8 50 51.4	.7651332	10 08.5	29	02 11 30.82	12 00 09.7	.7273300	07 42.8
15	01 37 02.05	8 55 43.7	.7646059	10 05.4	30	02 12 09.42	12 03 20.7	.7262250	07 39.5
16	01 37 53.18	9 00 34.4	.7640647	10 02.3	July 1	02 12 47.60	12 06 29.0	.7251094	07 36.2
17	01 38 44.16	9 05 23.4	.7635097	09 59.2	2	02 13 25.36	12 09 34.5	.7239835	07 32.9
18	01 39 34.97	N. 9 10 10.8	0.7629408	09 56.2	3	02 14 02.69	N. 12 12 37.3	0.7228473	07 29.6

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
April	10	1.48	15.44	May	30	1.55	16.16
	20	1.48	15.48	June	9	1.58	16.45
	30	1.49	15.57		19	1.61	16.81
May	10	1.50	15.71		29	1.65	17.22
	20	1.52	15.90	July	9	1.69	17.69

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Mean No. n.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
July 3	02 14 02.60	N. 12 12 37.3	0.7228473	07 29.6	Aug. 18	02 32 49.55	N. 13 36 51.1	0.6625497	04 47.5
4	02 14 30.50	12 15 37.3	.7217009	07 26.3	19	02 32 58.58	13 37 21.0	.6611610	04 43.8
5	02 15 16.05	12 18 34.5	.7205444	07 23.0	20	02 33 06.86	13 37 47.2	.6597747	04 40.0
6	02 15 52.04	12 21 28.8	.7193770	07 19.6	21	02 33 14.38	13 38 09.8	.6583911	04 36.2
7	02 16 27.50	12 24 20.3	.7182015	07 16.3	22	02 33 21.13	13 38 28.7	.6570107	04 32.3
8	02 17 02.67	12 27 09.0	.7170154	07 12.9	23	02 33 27.12	13 38 44.0	.6556339	04 28.5
9	02 17 37.28	12 29 54.8	.7158107	07 09.6	24	02 33 32.34	13 38 55.6	.6542612	04 24.7
10	02 18 11.41	12 32 37.6	.7146145	07 06.2	25	02 33 36.79	13 39 03.5	.6528931	04 20.8
11	02 18 45.06	12 35 17.5	.7134000	07 02.9	26	02 33 40.47	13 39 07.8	.6515301	04 17.0
12	02 19 18.20	12 37 54.5	.7121763	06 59.5	27	02 33 43.38	13 39 08.4	.6501725	04 13.1
13	02 19 50.85	12 40 28.5	.7109436	06 56.1	28	02 33 45.51	13 39 05.4	.6488209	04 09.2
14	02 20 22.98	12 42 50.4	.7097021	06 52.7	29	02 33 46.86	13 38 58.7	.6474757	04 05.3
15	02 20 54.59	12 45 27.3	.7084519	06 49.3	30	02 33 47.43	13 38 48.3	.6461373	04 01.4
16	02 21 25.67	12 47 52.1	.7071932	06 45.9	31	02 33 47.22	13 38 34.3	.6448063	03 57.4
17	02 21 56.22	12 50 13.9	.7059264	06 42.4	Sept. 1	02 33 46.22	13 38 16.6	.6434831	03 53.5
18	02 22 26.22	12 52 32.5	.7046515	06 39.0	2	02 33 44.45	13 37 55.3	.6421683	03 49.5
19	02 22 55.67	12 54 48.0	.7033689	06 35.6	3	02 33 41.88	13 37 30.3	.6408623	03 45.6
20	02 23 24.57	12 57 00.3	.7020788	06 32.1	4	02 33 38.54	13 37 01.6	.6395657	03 41.6
21	02 23 52.90	12 59 09.5	.7007814	06 28.7	5	02 33 34.41	13 36 29.3	.6382790	03 37.6
22	02 24 20.65	13 01 15.4	.6994771	06 25.2	6	02 33 29.49	13 35 53.3	.6370028	03 33.6
23	02 24 47.83	13 03 18.1	.6981660	06 21.7	7	02 33 23.79	13 35 13.7	.6357376	03 29.6
24	02 25 14.42	13 05 17.6	.6968484	06 18.2	8	02 33 17.30	13 34 30.4	.6344841	03 25.5
25	02 25 40.42	13 07 13.9	.6955244	06 14.7	9	02 33 10.02	13 33 43.5	.6332428	03 21.5
26	02 26 05.82	13 09 06.0	.6941944	06 11.2	10	02 33 01.97	13 32 52.9	.6320143	03 17.4
27	02 26 30.62	13 10 56.7	.6928585	06 07.7	11	02 32 53.14	13 31 58.7	.6307992	03 13.3
28	02 26 54.81	13 12 44.1	.6915170	06 04.2	12	02 32 43.53	13 31 01.0	.6295982	03 09.3
29	02 27 18.35	13 14 26.3	.6901701	06 00.6	13	02 32 33.15	13 29 59.7	.6284118	03 05.2
30	02 27 41.32	13 16 06.2	.6888182	05 57.1	14	02 32 22.00	13 28 54.8	.6272408	03 01.0
31	02 28 03.04	13 17 42.8	.6874616	05 53.5	15	02 32 10.10	13 27 46.5	.6260856	02 56.9
Aug. 1	02 28 25.31	13 19 16.0	.6861024	05 50.0	16	02 31 57.45	13 26 34.6	.6249471	02 52.8
2	02 28 46.35	13 20 45.8	.6847349	05 46.4	17	02 31 44.05	13 25 19.3	.6238257	02 48.6
3	02 29 07.71	13 22 12.1	.6833653	05 42.8	18	02 31 29.91	13 24 00.6	.6227221	02 44.5
4	02 29 28.44	13 23 35.4	.6819920	05 39.2	19	02 31 15.05	13 22 38.5	.6216368	02 40.3
5	02 29 48.52	13 24 55.1	.6806151	05 35.6	20	02 30 59.47	13 21 13.1	.6205704	02 36.1
6	02 30 03.01	13 26 11.4	.6792300	05 32.0	21	02 30 43.18	13 19 44.4	.6195235	02 31.9
7	02 30 21.61	13 27 24.2	.6778420	05 28.3	22	02 30 26.19	13 18 12.5	.6184967	02 27.7
8	02 30 38.61	13 28 33.6	.6764604	05 24.7	23	02 30 08.51	13 16 57.4	.6174905	02 23.5
9	02 30 54.96	13 29 39.4	.6750786	05 21.0	24	02 29 50.16	13 14 59.2	.6165055	02 19.3
10	02 31 10.50	13 30 41.7	.6736888	05 17.3	25	02 29 31.14	13 13 17.9	.6155423	02 15.0
11	02 31 25.50	13 31 40.4	.6722975	05 13.6	26	02 29 11.46	13 11 33.6	.6146014	02 10.8
12	02 31 40.70	13 32 35.6	.6709051	05 09.9	27	02 28 51.14	13 09 46.3	.6136832	02 06.5
13	02 31 55.18	13 33 27.2	.6695110	05 06.2	28	02 28 30.20	13 07 56.1	.6127884	02 02.2
14	02 32 09.43	13 34 15.3	.6681184	05 02.5	29	02 28 08.63	13 06 03.0	.6119173	01 57.9
15	02 32 23.05	13 34 59.1	.6667250	04 58.8	30	02 27 46.46	13 04 07.2	.6110705	01 53.6
16	02 32 36.23	13 35 40.5	.6653321	04 55.1	Oct. 1	02 27 23.70	13 02 08.6	.6102486	01 49.3
17	02 32 49.76	13 36 17.6	.6639402	04 51.3	2	02 27 00.36	13 00 07.4	.6094521	01 45.0
18	02 32 40.55	N. 13 36 51.1	0.6625497	04 47.5	3	02 26 36.46	N. 12 58 03.6	0.6086815	01 40.7

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
July	19	1.74	18.20	September	7	2.04	21.27
	29	1.80	18.75		17	2.09	21.86
August	8	1.85	19.35		27	2.14	22.37
	18	1.91	19.99	October	7	2.18	22.77
	28	1.98	20.64		17	2.21	23.04

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Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Oct. 3	02 26 36.46	N.12 58 03.6	0.6086815	01 40.7	Nov. 18	02 04 04.42	N.11 04 59.7	0.6069875	22 13.1
4	02 26 12.00	12 53 57.2	0.6079375	01 36.4	19	02 03 38.20	11 02 52.9	0.6077076	22 08.7
5	02 25 47.02	12 53 48.3	0.6072204	01 32.0	20	02 03 12.47	11 00 48.9	0.6084565	22 04.4
6	02 25 21.51	12 51 37.1	0.6065308	01 27.7	21	02 02 47.26	10 58 47.8	0.6092335	22 00.0
7	02 24 55.51	12 49 23.5	0.6058693	01 23.3	22	02 02 22.57	10 56 49.7	0.6100382	21 55.7
8	02 24 29.02	12 47 07.6	0.6052362	01 18.9	23	02 01 58.43	10 54 54.7	0.6108700	21 51.3
9	02 24 02.07	12 44 49.6	0.6046322	01 14.6	24	02 01 34.85	10 53 02.9	0.6117283	21 47.0
10	02 23 34.68	12 42 29.6	0.6040577	01 10.2	25	02 01 11.84	10 51 14.2	0.6126127	21 42.7
11	02 23 06.86	12 40 07.6	0.6035131	01 05.8	26	02 00 49.42	10 49 28.9	0.6135226	21 38.4
12	02 22 38.64	12 37 43.7	0.6029989	01 01.4	27	02 00 27.60	10 47 47.0	0.6144576	21 34.1
13	02 22 10.05	12 35 18.0	0.6025154	00 57.0	28	02 00 06.40	10 46 08.6	0.6154171	21 29.9
14	02 21 41.10	12 32 50.8	0.6020630	00 52.6	29	01 59 45.82	10 44 33.7	0.6164005	21 25.6
15	02 21 11.81	12 30 22.0	0.6016421	00 48.2	30	01 59 25.88	10 43 02.3	0.6174074	21 21.3
16	02 20 42.20	12 27 51.8	0.6012530	00 43.8	Dec. 1	01 59 06.60	10 41 34.7	0.6184371	21 17.1
17	02 20 12.31	12 25 20.2	0.6008960	00 39.3	2	01 58 47.98	10 40 10.8	0.6194892	21 12.8
18	02 19 42.15	12 22 47.5	0.6005715	00 34.9	3	01 58 30.04	10 38 50.7	0.6205630	21 08.6
19	02 19 11.74	12 20 13.7	0.6002796	00 30.5	4	01 58 12.79	10 37 34.4	0.6216581	21 04.4
20	02 18 41.12	12 17 38.9	0.6000205	00 26.0	5	01 57 56.23	10 36 22.1	0.6227738	21 00.2
21	02 18 10.30	12 15 03.3	0.5997945	00 21.6	6	01 57 40.39	10 35 13.7	0.6239097	20 56.0
22	02 17 39.31	12 12 27.0	0.5996017	00 17.2	7	01 57 25.26	10 34 09.4	0.6250650	20 51.8
23	02 17 08.18	12 09 50.1	0.5994423	00 12.7	8	01 57 10.86	10 33 09.2	0.6262392	20 47.7
24	02 16 36.92	12 07 12.8	0.5993163	00 08.3	9	01 56 57.20	10 32 13.1	0.6274316	20 43.5
25	02 16 05.56	12 04 35.0	0.5992239	00 03.8	10	01 56 44.29	10 31 21.3	0.6286416	20 39.4
26	02 15 34.13	12 01 57.1	0.5991651	23 54.9	11	01 56 32.14	10 30 33.6	0.6298686	20 35.3
27	02 15 02.65	11 59 19.1	0.5991399	23 50.4	12	01 56 20.75	10 29 50.3	0.6311119	20 31.1
28	02 14 31.14	11 56 41.0	0.5991484	23 46.0	13	01 56 10.13	10 29 11.2	0.6323709	20 27.0
29	02 13 59.63	11 54 03.1	0.5991907	23 41.5	14	01 56 00.28	10 28 36.5	0.6336449	20 22.9
30	02 13 28.13	11 51 25.4	0.5992666	23 37.1	15	01 55 51.21	10 28 06.1	0.6349334	20 18.9
31	02 12 56.67	11 48 48.1	0.5993763	23 32.6	16	01 55 42.92	10 27 18.5	0.6362356	20 14.8
Nov. 1	02 12 25.28	11 46 11.2	0.5995196	23 28.2	17	01 55 35.43	10 27 18.5	0.6375509	20 10.7
2	02 11 53.98	11 43 34.9	0.5996966	23 23.7	18	01 55 28.73	10 27 01.4	0.6388788	20 06.7
3	02 11 22.78	11 40 59.4	0.5999072	23 19.3	19	01 55 22.82	10 26 48.7	0.6402185	20 02.7
4	02 10 51.72	11 38 24.7	0.6001513	23 14.9	20	01 55 17.70	10 26 40.4	0.6415694	19 58.7
5	02 10 20.83	11 35 51.0	0.6004289	23 10.4	21	01 55 13.38	10 26 36.5	0.6429310	19 54.7
6	02 09 50.11	11 33 18.4	0.6007398	23 06.0	22	01 55 09.86	10 26 37.1	0.6443025	19 50.7
7	02 09 19.60	11 30 47.0	0.6010839	23 01.5	23	01 55 07.13	10 26 42.1	0.6456834	19 46.7
8	02 08 49.33	11 28 17.0	0.6014611	22 57.1	24	01 55 05.20	10 26 51.5	0.6470731	19 42.8
9	02 08 19.30	11 25 48.5	0.6018711	22 52.7	25	01 55 04.06	10 27 05.2	0.6484710	19 38.8
10	02 07 49.56	11 23 21.6	0.6023137	22 48.2	26	01 55 03.72	10 27 23.4	0.6498767	19 34.9
11	02 07 20.12	11 20 56.4	0.6027886	22 43.8	27	01 55 04.17	10 27 45.9	0.6512896	19 30.9
12	02 06 51.01	11 18 33.1	0.6032954	22 39.4	28	01 55 05.42	10 28 12.7	0.6527093	19 27.0
13	02 06 22.25	11 16 11.9	0.6038339	22 35.0	29	01 55 07.45	10 28 43.9	0.6541351	19 23.2
14	02 05 53.86	11 13 52.7	0.6044036	22 30.6	30	01 55 10.28	10 29 19.4	0.6555667	19 19.3
15	02 05 25.86	11 11 35.8	0.6050042	22 26.2	31	01 55 13.89	10 29 59.2	0.6570034	19 15.4
16	02 04 58.27	11 09 21.3	0.6056354	22 21.8	32	01 55 18.29	N.10 30 43.3	0.6584448	19 11.6
17	02 04 31.12	11 07 09.2	0.6062966	22 17.5					
18	02 04 04.42	N.11 04 59.7	0.6069875	22 13.1					

	Hor. Par.	Polar Semidiameter.		Hor. Par.	Polar Semidiameter
	"	"		"	"
October 27	2.21	23.14	December 6	2.09	21.85
November 6	2.21	23.05	16	2.03	21.24
16	2.18	22.79	26	1.97	20.58
26	2.14	22.38	36	1.91	19.92

SATURN, 1928.

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
h m	h m s	° ' "		h m	h m s	° ' "		h m	h m
Jan. 1	16 40 27.03	S. 20 54 55.1	1.0367619	10 10.1	Feb. 16	17 07 18.57	S. 21 19 10.6	1.0141043	07 27.0
2	16 40 55.14	20 55 42.2	.0364609	10 06.6	17	17 07 35.16	21 19 26.5	.0134469	07 23.4
3	16 50 23.10	20 56 28.6	.0361503	10 03.2	18	17 07 51.40	21 19 41.8	.0127845	07 19.7
4	16 51 57.91	20 57 14.3	.0358322	09 59.7	19	17 08 07.29	21 19 56.5	.0121171	07 16.0
5	16 51 11.57	20 57 59.3	.0355006	09 56.2	20	17 08 22.81	21 20 10.6	.0114451	07 12.3
6	16 51 46.07	20 58 43.7	.0351617	09 52.8	21	17 08 37.96	21 20 24.1	.0107685	07 08.7
7	16 52 12.41	20 59 27.3	.0348134	09 49.3	22	17 08 52.74	21 20 37.0	.0100875	07 05.0
8	16 52 40.58	21 00 10.3	.0344559	09 45.8	23	17 09 07.15	21 20 49.3	.0094023	07 01.3
9	16 53 07.58	21 00 52.6	.0340892	09 42.3	24	17 09 21.18	21 21 00.9	.0087131	06 57.6
10	16 53 34.41	21 01 34.2	.0337133	09 38.8	25	17 09 34.83	21 21 12.0	.0080201	06 53.9
11	16 54 01.06	21 02 15.2	.0333283	09 35.3	26	17 09 48.10	21 21 22.5	.0073235	06 50.2
12	16 54 27.53	21 02 55.4	.0329343	09 31.8	27	17 10 00.98	21 21 32.4	.0066234	06 46.5
13	16 54 53.80	21 03 34.9	.0325312	09 28.3	28	17 10 13.47	21 21 41.6	.0059201	06 42.8
14	16 55 19.84	21 04 13.8	.0321191	09 24.8	29	17 10 25.57	21 21 50.3	.0052136	06 39.0
15	16 55 45.76	21 04 51.9	.0316982	09 21.3	Mar. 1	17 10 37.28	21 21 58.5	.0045042	06 35.3
16	16 56 11.43	21 05 29.4	.0312684	09 17.8	2	17 10 48.60	21 22 06.1	.0037921	06 31.6
17	16 56 36.89	21 06 06.2	.0308299	09 14.3	3	17 10 59.52	21 22 13.1	.0030774	06 27.8
18	16 57 02.14	21 06 42.2	.0303827	09 10.8	4	17 11 10.03	21 22 19.6	.0023603	06 24.1
19	16 57 27.16	21 07 17.6	.0299269	09 07.3	5	17 11 20.14	21 22 25.6	.0016411	06 20.3
20	16 57 51.96	21 07 52.3	.0294626	09 03.7	6	17 11 29.85	21 22 31.0	.0009199	06 16.5
21	16 58 16.52	21 08 26.3	.0289898	09 00.2	7	17 11 39.16	21 22 35.9	.0001969	06 12.7
22	16 58 40.85	21 08 59.6	.0285088	08 56.7	8	17 11 48.06	21 22 40.2	.00994722	06 08.9
23	16 59 04.94	21 09 32.1	.0280194	08 53.2	9	17 11 56.54	21 22 44.0	.9987460	06 05.2
24	16 59 28.78	21 10 04.0	.0275220	08 49.7	10	17 12 04.62	21 22 47.3	.9980185	06 01.4
25	16 59 52.37	21 10 35.2	.0270165	08 46.1	11	17 12 12.28	21 22 50.0	.9972900	05 57.6
26	17 00 15.60	21 11 05.1	.0265031	08 42.6	12	17 12 19.52	21 22 52.2	.9965605	05 53.8
27	17 00 38.76	21 11 35.5	.0259819	08 39.0	13	17 12 26.34	21 22 53.9	.9958304	05 49.9
28	17 01 01.50	21 12 04.6	.0254531	08 35.5	14	17 12 32.74	21 22 55.2	.9950999	05 46.1
29	17 01 24.70	21 12 33.0	.0249168	08 31.9	15	17 12 38.72	21 22 55.9	.9943691	05 42.3
30	17 01 47.35	21 13 00.8	.0243730	08 28.3	16	17 12 44.28	21 22 56.1	.9936382	05 38.5
31	17 02 09.37	21 13 27.8	.0238220	08 24.8	17	17 12 49.41	21 22 55.8	.9929075	05 34.6
Feb. 1	17 02 30.01	21 13 54.2	.0232637	08 21.2	18	17 12 54.11	21 22 55.0	.9921772	05 30.8
2	17 02 51.41	21 14 19.9	.0226984	08 17.6	19	17 12 58.38	21 22 53.7	.9914475	05 26.9
3	17 03 12.53	21 14 44.0	.0221261	08 14.0	20	17 13 02.22	21 22 51.9	.9907186	05 23.0
4	17 03 33.31	21 15 07.3	.0215469	08 10.5	21	17 13 05.63	21 22 49.7	.9899908	05 19.1
5	17 03 53.86	21 15 30.0	.0209610	08 06.9	22	17 13 08.61	21 22 46.9	.9892642	05 15.3
6	17 04 14.06	21 15 51.9	.0203684	08 03.3	23	17 13 11.15	21 22 43.7	.9885393	05 11.4
7	17 04 33.97	21 16 18.3	.0197693	07 59.7	24	17 13 13.27	21 22 40.0	.9878161	05 07.5
8	17 04 53.50	21 16 43.9	.0191638	07 56.1	25	17 13 14.96	21 22 35.9	.9870951	05 03.6
9	17 05 12.83	21 17 01.1	.0185520	07 52.5	26	17 13 16.21	21 22 31.2	.9863763	04 59.7
10	17 05 31.70	21 17 21.5	.0179341	07 48.8	27	17 13 17.04	21 22 26.2	.9856622	04 55.8
11	17 05 50.42	21 17 41.3	.0173102	07 45.2	28	17 13 17.43	21 22 20.6	.9849468	04 51.9
12	17 06 08.73	21 18 00.4	.0166803	07 41.6	29	17 13 17.40	21 22 14.6	.9842364	04 47.9
13	17 06 26.70	21 18 18.9	.0160447	07 38.0	30	17 13 16.94	21 22 08.2	.9835293	04 44.0
14	17 06 44.33	21 18 36.5	.0154034	07 34.3	31	17 13 16.05	21 22 01.4	.9828256	04 40.0
15	17 07 01.63	21 18 54.0	.0147565	07 30.7	Apr. 1	17 13 14.74	21 21 54.1	.9821255	04 36.1
16	17 07 18.57	21 19 10.6	1.0141043	07 27.0	2	17 13 13.01	S. 21 21 46.4	.09814292	04 32.1

		Hor. Par.	Polar Semi-diameter.			Hor. Par.	Polar Semi-diameter.
January	1	0.81	6.85	February	20	0.86	7.26
	11	0.81	6.91	March	1	0.87	7.37
	21	0.82	6.98		11	0.88	7.50
	31	0.83	7.06		21	0.90	7.63
February	10	0.84	7.15		31	0.92	7.76

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Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
h m s	° ' "	° ' "		h m	h m s	° ' "	° ' "		h m
Apt. 2	17 13 13.01	S. 21 21 46.4	0.9814292	04 32.1	May 18	17 05 09.99	S. 21 09 22.0	0.9574906	01 23.3
3	17 13 10.85	21 21 38.3	.9807371	04 28.2	19	17 04 52.70	21 08 59.3	.9572231	01 19.1
4	17 13 08.28	21 21 29.8	.9800492	04 24.2	20	17 04 35.24	21 08 36.5	.9569690	01 14.9
5	17 13 05.29	21 21 20.8	.9793659	04 20.2	21	17 04 17.61	21 08 13.5	.9567286	01 10.7
6	17 13 01.88	21 21 11.5	.9786874	04 16.2	22	17 03 59.84	21 07 50.3	.9565018	01 06.5
7	17 12 58.06	21 21 01.7	.9780140	04 12.2	23	17 03 41.91	21 07 27.1	.9562888	01 02.2
8	17 12 53.82	21 20 51.5	.9773457	04 08.2	24	17 03 23.85	21 07 03.7	.9560898	00 58.0
9	17 12 49.17	21 20 40.9	.9766829	04 04.2	25	17 03 05.66	21 06 40.3	.9559048	00 53.8
10	17 12 44.11	21 20 29.9	.9760258	04 00.2	26	17 02 47.36	21 06 16.7	.9557337	00 49.5
11	17 12 38.65	21 20 18.6	.9753745	03 56.2	27	17 02 28.95	21 05 53.1	.9555767	00 45.3
12	17 12 32.78	21 20 06.8	.9747293	03 52.2	28	17 02 10.45	21 05 29.5	.9554338	00 41.1
13	17 12 26.51	21 19 54.6	.9740905	03 48.1	29	17 01 51.86	21 05 05.8	.9553050	00 36.8
14	17 12 19.84	21 19 42.1	.9734584	03 44.1	30	17 01 33.19	21 04 42.0	.9551904	00 32.6
15	17 12 12.77	21 19 29.2	.9728331	03 40.1	31	17 01 14.45	21 04 18.2	.9550901	00 28.3
16	17 12 05.30	21 19 15.9	.9722150	03 36.0	June 1	17 00 55.65	21 03 54.4	.9550040	00 24.1
17	17 11 57.45	21 19 02.2	.9716041	03 31.9	2	17 00 36.80	21 03 30.5	.9549322	00 19.9
18	17 11 49.21	21 18 48.2	.9710008	03 27.9	3	17 00 17.91	21 03 06.6	.9548747	00 15.6
19	17 11 40.59	21 18 33.7	.9704054	03 23.8	4	16 59 58.99	21 02 42.8	.9548315	00 11.4
20	17 11 31.59	21 18 18.9	.9698181	03 19.7	5	16 59 40.04	21 02 19.0	.9548027	00 07.1
21	17 11 22.22	21 18 03.7	.9692391	03 15.6	6	16 59 21.08	21 01 55.2	.9547882	00 02.8
22	17 11 12.48	21 17 48.2	.9686687	03 11.5	7	16 59 02.12	21 01 31.5	.9547880	23 58.6
23	17 11 02.38	21 17 32.4	.9681072	03 07.5	8	16 58 43.16	21 01 07.9	.9548022	23 50.1
24	17 10 51.92	21 17 16.2	.9675547	03 03.4	9	16 58 24.21	21 00 44.3	.9548307	23 45.9
25	17 10 41.11	21 16 59.7	.9670114	02 59.3	10	16 58 05.29	21 00 20.8	.9548736	23 41.6
26	17 10 29.95	21 16 42.9	.9664775	02 55.1	11	16 57 46.39	20 59 57.5	.9549309	23 37.4
27	17 10 18.46	21 16 25.8	.9659533	02 51.0	12	16 57 27.54	20 59 34.2	.9550025	23 33.2
28	17 10 06.63	21 16 08.3	.9654389	02 46.9	13	16 57 08.74	20 59 11.1	.9550885	23 28.9
29	17 09 54.48	21 15 50.5	.9649345	02 42.8	14	16 56 50.01	20 58 48.1	.9551888	23 24.7
30	17 09 42.00	21 15 32.5	.9644404	02 38.6	15	16 56 31.34	20 58 25.3	.9553034	23 20.4
May 1	17 09 29.21	21 15 14.1	.9639566	02 34.5	16	16 56 12.75	20 58 02.6	.9554322	23 16.2
2	17 09 16.11	21 14 55.5	.9634834	02 30.3	17	16 55 54.26	20 57 40.2	.9555752	23 12.0
3	17 09 02.71	21 14 36.5	.9630209	02 26.1	18	16 55 35.86	20 57 17.9	.9557324	23 07.7
4	17 08 49.01	21 14 17.3	.9625694	02 22.0	19	16 55 17.58	20 56 56.0	.9559035	23 03.5
5	17 08 35.03	21 13 57.8	.9621289	02 17.8	20	16 54 59.41	20 56 34.2	.9560885	22 59.2
6	17 08 20.76	21 13 38.0	.9616998	02 13.7	21	16 54 41.38	20 56 12.7	.9562874	22 55.0
7	17 08 06.21	21 13 17.9	.9612820	02 09.5	22	16 54 23.48	20 55 51.5	.9565000	22 50.8
8	17 07 51.40	21 12 57.6	.9608759	02 05.3	23	16 54 05.73	20 55 30.5	.9567262	22 46.6
9	17 07 36.32	21 12 37.1	.9604815	02 01.2	24	16 53 48.14	20 55 09.9	.9569659	22 42.3
10	17 07 20.98	21 12 16.3	.9600991	01 57.0	25	16 53 30.72	20 54 49.6	.9572190	22 38.1
11	17 07 05.40	21 11 55.3	.9597288	01 52.8	26	16 53 13.47	20 54 29.7	.9574853	22 33.9
12	17 06 49.57	21 11 34.1	.9593709	01 48.6	27	16 52 56.40	20 54 10.2	.9577648	22 29.7
13	17 06 33.51	21 11 12.6	.9590254	01 44.4	28	16 52 39.52	20 53 51.0	.9580572	22 25.5
14	17 06 17.23	21 10 50.9	.9586926	01 40.2	29	16 52 22.84	20 53 32.2	.9583624	22 21.3
15	17 06 00.72	21 10 28.9	.9583726	01 36.0	30	16 52 06.37	20 53 13.7	.9586803	22 17.1
16	17 05 44.01	21 10 06.8	.9580655	01 31.8	July 1	16 51 50.11	20 52 55.7	.9590108	22 12.9
17	17 05 27.09	21 09 44.4	.9577714	01 27.6	2	16 51 34.07	20 52 38.1	.9593537	22 08.7
18	17 05 09.99	S. 21 09 22.0	0.9574906	01 23.3	3	16 51 18.25	S. 20 52 20.9	0.9597089	22 04.5

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
		"	"			"	"
April	10	0.93	7.88	May	30	0.97	8.27
	20	0.94	7.99	June	9	0.98	8.27
	30	0.95	8.09		19	0.97	8.25
May	10	0.96	8.18		29	0.97	8.21
	20	0.97	8.23	July	9	0.96	8.14

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Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
July 3	16 51 18.25	S. 20 52 20.9	0.9597089	22 04.5	Aug. 18	16 44 57.36	S. 20 50 11.0	0.9860959	18 57.4
4	16 51 22.67	20 52 04.2	0.9600762	22 00.3	19	16 44 58.07	20 50 25.1	0.9868080	18 53.5
5	16 51 27.33	20 51 48.0	0.9604554	21 56.1	20	16 44 59.20	20 50 40.0	0.9875223	18 49.6
6	16 50 32.24	20 51 32.2	0.9608465	21 51.9	21	16 45 00.75	20 50 55.6	0.9882387	18 45.7
7	16 50 17.41	20 51 16.9	0.9612492	21 47.8	22	16 45 02.71	20 51 12.0	0.9889569	18 41.8
8	16 50 02.83	20 51 02.0	0.9616633	21 43.6	23	16 45 05.08	20 51 29.1	0.9896767	18 37.9
9	16 49 48.53	20 50 47.7	0.9620888	21 39.4	24	16 45 07.87	20 51 46.9	0.9903980	18 34.0
10	16 49 34.50	20 50 33.9	0.9625255	21 35.3	25	16 45 11.06	20 52 05.5	0.9911204	18 30.1
11	16 49 20.75	20 50 20.6	0.9629733	21 31.1	26	16 45 14.68	20 52 24.8	0.9918439	18 26.3
12	16 49 07.30	20 50 07.9	0.9634319	21 26.9	27	16 45 18.70	20 52 44.8	0.9925681	18 22.4
13	16 48 54.13	20 49 55.7	0.9639012	21 22.8	28	16 45 23.14	20 53 05.5	0.9932929	18 18.5
14	16 48 41.22	20 49 44.1	0.9643810	21 18.7	29	16 45 27.98	20 53 26.9	0.9940181	18 14.7
15	16 48 28.77	20 49 33.1	0.9648712	21 14.5	30	16 45 33.23	20 53 49.1	0.9947434	18 10.8
16	16 48 16.40	20 49 22.8	0.9653714	21 10.4	31	16 45 38.89	20 54 11.9	0.9954688	18 07.0
17	16 48 04.57	20 49 13.1	0.9658815	21 06.3	Sept. 1	16 45 44.95	20 54 35.4	0.9961939	18 03.2
18	16 47 52.99	20 49 04.0	0.9664013	21 02.1	2	16 45 51.41	20 54 59.5	0.9969187	17 59.4
19	16 47 41.74	20 48 55.5	0.9669305	20 58.0	3	16 45 58.27	20 55 24.4	0.9976429	17 55.5
20	16 47 30.83	20 48 47.7	0.9674690	20 53.9	4	16 46 05.54	20 55 49.9	0.9983664	17 51.7
21	16 47 20.26	20 48 40.5	0.9680164	20 49.8	5	16 46 13.21	20 56 16.0	0.9990891	17 47.9
22	16 47 10.03	20 48 34.0	0.9685726	20 45.7	6	16 46 21.28	20 56 42.8	0.9998107	17 44.1
23	16 47 00.16	20 48 28.2	0.9691374	20 41.6	7	16 46 29.75	20 57 10.2	1.0005310	17 40.3
24	16 46 50.65	20 48 23.1	0.9697104	20 37.6	8	16 46 38.62	20 57 38.3	0.0012498	17 36.6
25	16 46 41.49	20 48 18.7	0.9702916	20 33.5	9	16 46 47.88	20 58 07.0	0.0019669	17 32.8
26	16 46 32.70	20 48 14.9	0.9708806	20 29.4	10	16 46 57.53	20 58 36.3	0.0026822	17 29.0
27	16 46 24.28	20 48 11.9	0.9714772	20 25.3	11	16 47 07.58	20 59 06.2	0.0033954	17 25.2
28	16 46 16.22	20 48 09.6	0.9720813	20 21.2	12	16 47 18.01	20 59 36.6	0.0041063	17 21.5
29	16 46 08.54	20 48 07.9	0.9726925	20 17.2	13	16 47 28.84	21 00 07.7	0.0048148	17 17.7
30	16 46 01.24	20 48 07.0	0.9733107	20 13.1	14	16 47 40.06	21 00 39.3	0.0055208	17 14.0
31	16 45 54.32	20 48 06.8	0.9739358	20 09.1	15	16 47 51.67	21 01 11.5	0.0062239	17 10.3
Aug. 1	16 45 47.78	20 48 07.4	0.9745674	20 05.1	16	16 48 03.65	21 01 44.3	0.0069241	17 06.5
2	16 45 41.62	20 48 08.6	0.9752051	20 01.0	17	16 48 16.01	21 02 17.6	0.0076211	17 02.8
3	16 45 35.86	20 48 10.6	0.9758493	19 57.0	18	16 48 28.75	21 02 51.5	0.0083146	16 59.1
4	16 45 30.48	20 48 13.4	0.9764991	19 53.0	19	16 48 41.85	21 03 25.8	0.0090047	16 55.4
5	16 45 25.49	20 48 16.9	0.9771546	19 49.0	20	16 48 55.33	21 04 00.7	0.0096910	16 51.7
6	16 45 20.90	20 48 21.1	0.9778156	19 45.0	21	16 49 09.17	21 04 36.0	0.0103735	16 48.0
7	16 45 16.71	20 48 26.1	0.9784818	19 41.0	22	16 49 23.38	21 05 11.8	0.0110520	16 44.3
8	16 45 12.91	20 48 31.8	0.9791531	19 37.0	23	16 49 37.95	21 05 48.0	0.0117263	16 40.6
9	16 45 09.52	20 48 38.3	0.9798292	19 33.0	24	16 49 52.87	21 06 24.7	0.0123963	16 36.9
10	16 45 06.52	20 48 45.5	0.9805100	19 29.0	25	16 50 08.15	21 07 01.8	0.0130619	16 33.2
11	16 45 03.94	20 48 53.5	0.9811952	19 25.0	26	16 50 23.78	21 07 39.4	0.0137229	16 29.5
12	16 45 01.76	20 49 02.3	0.9818846	19 21.0	27	16 50 39.75	21 08 17.3	0.0143791	16 25.9
13	16 45 00.00	20 49 11.8	0.9825780	19 17.1	28	16 50 56.07	21 08 55.6	0.0150305	16 22.2
14	16 44 58.60	20 49 22.1	0.9832751	19 13.1	29	16 51 12.73	21 09 34.3	0.0156768	16 18.6
15	16 44 57.74	20 49 33.2	0.9839757	19 09.2	30	16 51 29.72	21 10 13.4	0.0163180	16 14.9
16	16 44 57.17	20 49 45.0	0.9846795	19 05.3	Oct. 1	16 51 47.05	21 10 52.8	0.0169539	16 11.3
17	16 44 57.06	20 49 57.6	0.9853863	19 01.3	2	16 52 04.70	21 11 32.5	0.0175845	16 07.6
18	16 44 57.36	S. 20 50 11.0	0.9860959	18 57.4	3	16 52 22.69	S. 21 12 12.6	1.0182097	16 04.0

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
		"	"			"	"
July	19	0.95	8.04	September	7	0.87	7.45
	29	0.94	7.94		17	0.86	7.33
August	8	0.92	7.83		27	0.85	7.21
	18	0.91	7.70	October	7	0.84	7.11
	28	0.89	7.58		17	0.83	7.02

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Mean Noon.	Apparent Light Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Oct. 3	16 52 22.69	S. 21 12 12.6	1.0182097	16 04.0	Nov. 18	17 10 58.30	S. 21 44 52.3	1.0390581	13 21.7
4	16 52 41.00	21 12 53.0	0.0188292	16 00.4	19	17 11 27.20	21 45 32.5	0.0393064	13 18.2
5	16 52 59.64	21 13 33.7	0.0194431	15 56.8	20	17 11 56.23	21 46 12.4	0.0395449	13 14.8
6	16 53 18.59	21 14 14.7	0.0200510	15 53.1	21	17 12 25.38	21 46 51.9	0.0397736	13 11.3
7	16 53 37.86	21 14 56.0	0.0206529	15 49.5	22	17 12 54.64	21 47 31.1	0.0399924	13 07.8
8	16 53 57.44	21 15 37.5	0.0212487	15 45.9	23	17 13 24.01	21 48 10.0	0.0402015	13 04.4
9	16 54 17.33	21 16 19.2	0.0218382	15 42.3	24	17 13 53.48	21 48 48.6	0.0404008	13 01.0
10	16 54 37.52	21 17 01.2	0.0224212	15 38.7	25	17 14 23.05	21 49 26.8	0.0405902	12 57.5
11	16 54 58.01	21 17 43.4	0.0229977	15 35.1	26	17 14 52.72	21 50 04.7	0.0407697	12 54.1
12	16 55 18.80	21 18 25.9	0.0235675	15 31.5	27	17 15 22.47	21 50 42.2	0.0409392	12 50.7
13	16 55 39.89	21 19 08.6	0.0241304	15 27.9	28	17 15 52.31	21 51 19.4	0.0410986	12 47.2
14	16 56 01.26	21 19 51.4	0.0246864	15 24.4	29	17 16 22.23	21 51 56.2	0.0412479	12 43.8
15	16 56 22.92	21 20 34.4	0.0252354	15 20.8	30	17 16 52.23	21 52 32.5	0.0413872	12 40.3
16	16 56 44.87	21 21 17.5	0.0257772	15 17.2	Dec. 1	17 17 22.30	21 53 08.5	0.0415164	12 36.9
17	16 57 07.09	21 22 00.7	0.0263117	15 13.7	2	17 17 52.44	21 53 44.1	0.0416356	12 33.5
18	16 57 29.59	21 22 44.1	0.0268389	15 10.1	3	17 18 22.64	21 54 19.3	0.0417447	12 30.0
19	16 57 52.35	21 23 27.6	0.0273585	15 06.6	4	17 18 52.90	21 54 54.0	0.0418436	12 26.6
20	16 58 15.38	21 24 11.2	0.0278706	15 03.0	5	17 19 23.21	21 55 28.4	0.0419324	12 23.2
21	16 58 38.66	21 24 54.8	0.0283749	14 59.5	6	17 19 53.57	21 56 02.3	0.0420109	12 19.8
22	16 59 02.50	21 25 38.5	0.0288714	14 55.9	7	17 20 23.98	21 56 35.9	0.0420792	12 16.3
23	16 59 25.99	21 26 22.2	0.0293601	14 52.4	8	17 20 54.42	21 57 09.0	0.0421372	12 12.9
24	16 59 50.02	21 27 06.0	0.0298408	14 48.8	9	17 21 24.90	21 57 41.7	0.0421849	12 09.5
25	17 00 14.30	21 27 49.7	0.0303135	14 45.3	10	17 21 55.41	21 58 13.9	0.0422223	12 06.0
26	17 00 38.81	21 28 33.4	0.0307781	14 41.8	11	17 22 25.94	21 58 45.6	0.0422494	12 02.6
27	17 01 03.55	21 29 17.1	0.0312346	14 38.3	12	17 22 56.48	21 59 16.9	0.0422662	11 59.2
28	17 01 28.52	21 30 00.9	0.0316829	14 34.8	13	17 23 27.03	21 59 47.7	0.0422726	11 55.8
29	17 01 53.71	21 30 44.6	0.0321229	14 31.3	14	17 23 57.59	22 00 18.0	0.0422687	11 52.3
30	17 02 19.13	21 31 28.2	0.0325544	14 27.8	15	17 24 28.15	22 00 47.9	0.0422544	11 48.9
31	17 02 44.76	21 32 11.8	0.0329774	14 24.3	16	17 24 58.70	22 01 17.3	0.0422297	11 45.5
Nov. 1	17 03 10.61	21 32 55.3	0.0333918	14 20.8	17	17 25 29.25	22 01 46.3	0.0421947	11 42.1
2	17 03 36.66	21 33 38.8	0.0337977	14 17.2	18	17 25 59.78	22 02 14.7	0.0421493	11 38.6
3	17 04 02.92	21 34 22.1	0.0341948	14 13.7	19	17 26 30.29	22 02 42.6	0.0420937	11 35.2
4	17 04 29.38	21 35 05.3	0.0345833	14 10.2	20	17 27 00.77	22 03 10.1	0.0420277	11 31.8
5	17 04 56.03	21 35 48.4	0.0349629	14 06.8	21	17 27 31.23	22 03 37.0	0.0419515	11 28.4
6	17 05 22.88	21 36 31.4	0.0353336	14 03.3	22	17 28 01.65	22 04 03.4	0.0418650	11 24.9
7	17 05 49.91	21 37 14.2	0.0356953	13 59.8	23	17 28 32.02	22 04 29.4	0.0417684	11 21.5
8	17 06 17.13	21 37 56.9	0.0360479	13 56.3	24	17 29 02.35	22 04 54.8	0.0416616	11 18.1
9	17 06 44.52	21 38 39.4	0.0363913	13 52.8	25	17 29 32.62	22 05 19.8	0.0415446	11 14.6
10	17 07 12.09	21 39 21.7	0.0367255	13 49.3	26	17 30 02.85	22 05 44.2	0.0414175	11 11.2
11	17 07 39.82	21 40 03.9	0.0370503	13 45.9	27	17 30 33.01	22 06 08.2	0.0412803	11 07.8
12	17 08 07.73	21 40 45.8	0.0373657	13 42.4	28	17 31 03.12	22 06 31.6	0.0411329	11 04.3
13	17 08 35.79	21 41 27.5	0.0376716	13 39.0	29	17 31 33.15	22 06 54.5	0.0409755	11 00.9
14	17 09 04.01	21 42 09.0	0.0379681	13 35.5	30	17 32 03.11	22 07 16.9	0.0408080	10 57.5
15	17 09 32.37	21 42 50.2	0.0382550	13 32.0	31	17 32 32.99	22 07 38.9	0.0406304	10 54.0
16	17 10 00.88	21 43 31.2	0.0385323	13 28.6	32	17 33 02.78	S. 22 08 00.3	1.0404427	10 50.6
17	17 10 29.52	21 44 11.9	0.0388001	13 25.1					
18	17 10 58.30	S. 21 44 52.3	1.0390581	13 21.7					

	Hor. Par.	Polar Semidiameter.		Hor. Par.	Polar Semidiameter.
October 27	0.82	6.94	December 6	0.80	6.77
November 6	0.81	6.88	16	0.80	6.77
16	0.80	6.82	26	0.80	6.78
26	0.80	6.79	36	0.80	6.81

URANUS, 1928.

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
h m s	° ' "	° ' "		h m	h m s	° ' "	° ' "		h m
1927-28									
Dec. 29	23 59 54.59	S. 0 48 12.5	1.3048320	17 31.3	June 30	00 28 04.49	N. 2 14 44.6	1.3015570	05 55.8
Jan. 2	00 00 10.65	0 46 17.6	.3062965	17 15.8	July 4	00 28 12.13	2 15 25.1	.3001021	05 40.2
6	00 00 29.58	0 44 04.3	.3077362	17 00.4	8	00 28 16.93	2 15 47.3	.2986505	05 24.6
10	00 00 51.30	0 41 33.0	.3091449	16 45.0	12	00 28 18.88	2 15 51.3	.2972084	05 08.9
14	00 01 15.73	0 38 44.4	.3105167	16 29.7	16	00 28 17.96	2 15 36.8	.2957826	04 53.2
18	00 01 42.80	0 35 38.9	.3118458	16 14.4	20	00 28 14.19	2 15 04.1	.2943803	04 37.4
22	00 02 12.39	0 32 17.4	.3131259	15 59.2	24	00 28 07.61	2 14 13.4	.2930087	04 21.6
26	00 02 44.40	0 28 40.5	.3143515	15 44.0	28	00 27 58.28	2 13 05.2	.2916744	04 05.7
30	00 03 18.69	0 24 49.2	.3155175	15 28.8	Aug. 1	00 27 46.26	2 11 40.0	.2903839	03 49.8
Feb. 3	00 03 55.11	0 20 44.4	.3166190	15 13.7	5	00 27 31.63	2 09 58.3	.2891434	03 33.8
7	00 04 33.53	0 16 27.0	.3176528	14 58.6	9	00 27 14.47	2 08 00.6	.2879593	03 17.8
11	00 05 13.80	0 11 58.2	.3186146	14 43.6	13	00 26 54.88	2 05 47.6	.2868382	03 01.7
15	00 05 55.80	0 07 18.7	.3195014	14 28.5	17	00 26 32.96	2 03 20.0	.2857864	02 45.6
19	00 06 39.37	S. 0 02 29.4	.3203094	14 13.5	21	00 26 08.86	2 00 38.8	.2848106	02 29.5
23	00 07 24.36	N. 0 02 28.5	.3210360	13 58.5	25	00 25 42.76	1 57 45.1	.2839158	02 13.4
27	00 08 10.59	0 07 33.9	.3216776	13 43.6	29	00 25 14.81	1 54 40.1	.2831079	01 57.2
Mar. 2	00 08 57.89	0 12 45.8	.3222327	13 28.6	Sept. 2	00 24 45.19	1 51 24.9	.2823901	01 41.0
6	00 09 46.09	0 18 02.8	.3227002	13 13.7	6	00 24 14.08	1 48 00.6	.2817673	01 24.7
10	00 10 35.05	0 23 24.1	.3230786	12 58.8	10	00 23 41.67	1 44 28.5	.2812437	01 08.5
14	00 11 24.60	0 28 48.6	.3233674	12 43.9	14	00 23 08.17	1 40 49.9	.2808231	00 52.2
18	00 12 14.58	0 34 15.3	.3235653	12 29.0	18	00 22 33.81	1 37 06.4	.2805088	00 35.9
22	00 13 04.83	0 39 43.1	.3236713	12 14.1	22	00 21 58.82	1 33 19.6	.2803024	00 19.6
26	00 13 55.17	0 45 10.9	.3236855	11 59.2	26	00 21 23.46	1 29 31.1	.2802058	00 03.3
30	00 14 45.42	0 50 37.4	.3236079	11 44.3	30	00 20 47.95	1 25 42.2	.2802189	23 42.9
Apr. 3	00 15 35.41	0 56 01.6	.3234399	11 29.4	Oct. 4	00 20 12.52	1 21 54.6	.2803422	23 26.6
7	00 16 25.01	1 01 22.5	.3231825	11 14.5	8	00 19 37.40	1 18 09.7	.2805755	23 10.2
11	00 17 14.07	1 06 39.2	.3228369	10 59.6	12	00 19 02.84	1 14 29.0	.2809185	22 53.9
15	00 18 02.42	1 11 50.7	.3224042	10 44.7	16	00 18 29.07	1 10 54.2	.2813693	22 37.7
19	00 18 49.91	1 16 56.0	.3218855	10 29.7	20	00 17 56.36	1 07 26.8	.2819253	22 21.4
23	00 19 36.38	1 21 54.0	.3212831	10 14.7	24	00 17 24.93	1 04 08.4	.2825834	22 05.1
27	00 20 21.66	1 26 43.8	.3205993	09 59.8	28	00 16 54.99	1 01 00.2	.2833393	21 48.9
May 1	00 21 05.63	1 31 24.4	.3198375	09 44.8	Nov. 1	00 16 26.73	0 58 03.6	.2841884	21 32.7
5	00 21 48.14	1 35 54.9	.3190004	09 29.7	5	00 16 00.35	0 55 19.7	.2851267	21 16.6
9	00 22 29.07	1 40 14.7	.3180911	09 14.7	9	00 15 36.03	0 52 49.6	.2861492	21 00.4
13	00 23 08.29	1 44 22.9	.3171126	08 59.6	13	00 15 13.95	0 50 34.7	.2872502	20 44.4
17	00 23 45.68	1 48 18.7	.3160684	08 44.5	17	00 14 54.29	0 48 35.8	.2884233	20 28.3
21	00 24 21.09	1 52 01.3	.3149622	08 29.4	21	00 14 37.18	0 46 53.9	.2896612	20 12.3
25	00 24 54.39	1 55 29.8	.3137984	08 14.2	25	00 14 22.74	0 45 29.7	.2909571	19 56.3
29	00 25 25.49	1 58 43.7	.3125820	07 59.0	29	00 14 11.06	0 44 23.7	.2923035	19 40.4
June 2	00 25 54.29	2 01 42.3	.3113180	07 43.8	Dec. 3	00 14 02.23	0 43 36.4	.2936937	19 24.5
6	00 26 20.70	2 04 25.1	.3100109	07 28.5	7	00 13 56.31	0 43 08.3	.2951209	19 08.7
10	00 26 44.65	2 06 51.8	.3086654	07 13.2	11	00 13 53.39	0 42 59.7	.2965771	18 53.0
14	00 27 06.03	2 09 01.6	.3072866	06 57.8	15	00 13 53.49	0 43 10.9	.2980546	18 37.2
18	00 27 24.77	2 10 54.1	.3058799	06 42.4	19	00 13 56.66	0 43 42.0	.2995454	18 21.6
22	00 27 40.78	2 12 29.0	.3044520	06 26.9	23	00 14 02.86	0 44 32.9	.3010418	18 05.9
26	00 27 54.03	2 13 45.8	.3030089	06 11.4	27	00 14 12.09	0 45 43.4	.3025366	17 50.4
30	00 28 04.49	N. 2 14 44.6	1.3015570	05 55.8	31	00 14 24.31	N. 0 47 13.2	1.3040226	17 34.9

NEPTUNE, 1928.

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Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
1927-28	h m s	° ' "		h m		h m s	° ' "		h m
Dec. 29	10 05 13.36	N. 12 18 53.6	1.4699716	03 38.8	June 30	09 58 10.28	N. 12 57 39.1	1.4884004	15 24.4
Jan. 2	10 04 59.12	12 20 17.8	.4691882	03 22.9	July 4	09 58 35.51	12 55 23.7	.4890940	15 09.1
6	10 04 43.20	12 21 50.8	.4684521	03 06.9	8	09 59 02.03	12 53 01.5	.4897424	14 53.8
10	10 04 25.69	12 23 32.2	.4677673	02 50.8	12	09 59 29.79	12 50 32.7	.4903438	14 38.5
14	10 04 06.70	12 25 21.4	.4671376	02 34.8	16	09 59 58.67	12 47 57.8	.4908955	14 23.3
18	10 03 46.35	12 27 17.5	.4665668	02 18.8	20	10 00 28.59	12 45 17.4	.4913950	14 08.1
22	10 03 24.77	12 29 19.9	.4660582	02 02.7	24	10 00 59.41	12 42 32.1	.4918406	13 52.9
26	10 03 02.11	12 31 27.8	.4656152	01 46.6	28	10 01 31.05	12 39 42.3	.4922302	13 37.7
30	10 02 38.52	12 33 40.3	.4652400	01 30.5	Aug. 1	10 02 03.38	12 36 48.8	.4925634	13 22.5
Feb. 3	10 02 14.17	12 35 56.4	.4649347	01 14.3	5	10 02 36.30	12 33 52.1	.4928383	13 07.3
7	10 01 49.20	12 38 15.3	.4647006	00 58.2	9	10 03 09.71	12 30 52.7	.4930542	12 52.1
11	10 01 23.79	12 40 36.2	.4645388	00 42.0	13	10 03 43.50	12 27 51.2	.4932099	12 36.9
15	10 00 58.08	12 42 58.1	.4644502	00 25.9	17	10 04 17.55	12 24 48.2	.4933045	12 21.8
19	10 00 32.24	12 45 20.1	.4644351	00 09.7	21	10 04 51.74	12 21 44.5	.4933364	12 06.6
23	10 00 06.44	12 47 41.3	.4644945	23 49.5	25	10 05 25.94	12 18 40.6	.4933077	11 51.4
27	09 59 40.87	12 50 00.9	.4646276	23 33.4	29	10 06 00.03	12 15 37.2	.4932172	11 36.3
Mar. 2	09 59 15.70	12 52 17.7	.4648328	23 17.2	Sept. 2	10 06 33.91	12 12 35.1	.4930653	11 21.1
6	09 58 51.07	12 54 31.1	.4651083	23 01.1	6	10 07 07.48	12 09 34.6	.4928524	11 05.9
10	09 58 27.14	12 56 40.3	.4654524	22 45.0	10	10 07 40.60	12 06 36.5	.4925790	10 50.8
14	09 58 04.06	12 58 44.5	.4658637	22 28.9	14	10 08 13.17	12 03 41.5	.4922456	10 35.6
18	09 57 41.96	13 00 42.9	.4663390	22 12.8	18	10 08 45.05	12 00 50.2	.4918531	10 20.4
22	09 57 20.99	13 02 34.8	.4668763	21 56.7	22	10 09 16.14	11 58 03.3	.4914033	10 05.2
26	09 57 01.31	13 04 19.6	.4674721	21 40.7	26	10 09 46.30	11 55 21.6	.4908980	09 50.0
30	09 56 43.01	13 05 56.6	.4681227	21 24.6	30	10 10 15.46	11 52 45.4	.4903391	09 34.7
Apr. 3	09 56 26.21	13 07 25.3	.4688239	21 08.6	Oct. 4	10 10 43.50	11 50 15.5	.4897285	09 19.4
7	09 56 11.00	13 08 45.2	.4695720	20 52.6	8	10 11 10.32	11 47 52.4	.4890680	09 04.1
11	09 55 57.48	13 09 56.0	.4703631	20 36.7	12	10 11 35.82	11 45 36.7	.4883600	08 48.8
15	09 55 45.71	13 10 57.1	.4711931	20 20.8	16	10 11 59.88	11 43 29.0	.4876073	08 33.5
19	09 55 35.77	13 11 48.4	.4720574	20 04.9	20	10 12 22.41	11 41 29.9	.4868130	08 18.1
23	09 55 27.75	13 12 29.4	.4729524	19 49.0	24	10 12 43.32	11 39 39.9	.4859810	08 02.8
27	09 55 21.68	13 13 00.0	.4738722	19 33.2	28	10 13 02.55	11 37 59.4	.4851144	07 47.4
May 1	09 55 17.59	13 13 19.9	.4748124	19 17.4	Nov. 1	10 13 20.00	11 36 28.9	.4842169	07 31.9
5	09 55 15.51	13 13 29.1	.4757683	19 01.7	5	10 13 35.63	11 35 08.7	.4832920	07 16.5
9	09 55 15.44	13 13 27.6	.4767357	18 45.9	9	10 13 49.36	11 33 59.2	.4823433	07 01.0
13	09 55 17.40	13 13 15.4	.4777101	18 30.2	13	10 14 01.12	11 33 00.8	.4813757	06 45.4
17	09 55 21.39	13 12 52.4	.4786872	18 14.6	17	10 14 10.86	11 32 13.7	.4803936	06 29.9
21	09 55 27.41	13 12 18.7	.4796625	17 59.0	21	10 14 18.55	11 31 38.2	.4794018	06 14.3
25	09 55 35.43	13 11 34.4	.4806312	17 43.4	25	10 14 24.17	11 31 14.4	.4784053	05 58.6
29	09 55 45.43	13 10 39.7	.4815888	17 27.8	29	10 14 27.70	11 31 02.3	.4774084	05 43.0
June 2	09 55 57.35	13 09 34.8	.4825315	17 12.3	Dec. 3	10 14 29.14	11 31 02.0	.4764161	05 27.3
6	09 56 11.15	13 08 20.0	.4834551	16 56.8	7	10 14 28.47	11 31 13.4	.4754329	05 11.6
10	09 56 26.78	13 06 55.5	.4843565	16 41.3	11	10 14 25.71	11 31 36.5	.4744643	04 55.8
14	09 56 44.18	13 05 21.7	.4852317	16 25.9	15	10 14 20.88	11 32 11.2	.4735153	04 40.0
18	09 57 03.32	13 03 38.7	.4860776	16 10.5	19	10 14 14.01	11 32 57.2	.4725915	04 24.1
22	09 57 24.10	13 01 47.0	.4868897	15 55.1	23	10 14 05.16	11 33 54.1	.4716972	04 08.3
26	09 57 46.46	12 59 47.0	.4876648	15 39.7	27	10 13 54.40	11 35 01.6	.4708378	03 52.4
30	09 58 10.28	N. 12 57 39.1	1.4884004	15 24.4	31	10 13 41.81	N. 11 36 19.1	1.4700170	03 36.5

VENUS, 1928.

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Jan. 1	15 40 49.27	0.60	S. 17 03 53.9	08.53	08.93	Feb. 16	19 36 12.31	0.47	S. 21 09 07.6	06.55	06.85
2	15 45 35.96	0.59	17 20 55.5	08.47	08.86	17	19 41 24.78	0.47	21 00 06.3	06.52	06.82
3	15 50 23.97	0.59	17 37 34.9	08.41	08.80	18	19 46 36.67	0.46	20 50 27.8	06.49	06.79
4	15 55 13.28	0.59	17 53 51.3	08.35	08.74	19	19 51 47.96	0.46	20 40 12.6	06.46	06.76
5	16 00 03.91	0.58	18 09 44.0	08.30	08.68	20	19 56 58.59	0.46	20 29 20.9	06.43	06.73
6	16 04 55.83	0.58	18 25 12.2	08.24	08.62	21	20 02 08.54	0.46	20 17 53.1	06.40	06.70
7	16 09 49.04	0.58	18 40 15.3	08.18	08.56	22	20 07 17.75	0.45	20 05 49.6	06.37	06.67
8	16 14 43.50	0.57	18 54 52.3	08.13	08.50	23	20 12 26.19	0.45	19 53 10.9	06.34	06.64
9	16 19 39.22	0.57	19 09 02.6	08.08	08.45	24	20 17 33.82	0.45	19 39 57.4	06.32	06.61
10	16 24 36.16	0.57	19 22 45.5	08.02	08.39	25	20 22 40.62	0.44	19 26 09.6	06.29	06.58
11	16 29 34.33	0.56	19 36 00.3	07.97	08.34	26	20 27 46.55	0.44	19 11 47.9	06.27	06.56
12	16 34 33.67	0.56	19 48 46.2	07.92	08.28	27	20 32 51.60	0.44	18 56 52.8	06.24	06.53
13	16 39 34.17	0.56	20 01 02.6	07.87	08.23	28	20 37 55.75	0.44	18 41 25.0	06.21	06.50
14	16 44 35.80	0.56	20 12 48.8	07.82	08.18	29	20 42 58.97	0.43	18 25 24.8	06.18	06.47
15	16 49 38.52	0.55	20 24 04.1	07.77	08.13	Mar. 1	20 48 01.24	0.43	18 08 52.9	06.16	06.45
16	16 54 42.30	0.55	20 34 48.0	07.72	08.08	2	20 53 02.55	0.43	17 51 49.8	06.14	06.42
17	16 59 47.10	0.55	20 44 59.7	07.67	08.03	3	20 58 02.90	0.43	17 34 16.1	06.12	06.40
18	17 04 52.88	0.54	20 54 38.7	07.63	07.98	4	21 03 02.27	0.43	17 16 12.4	06.09	06.37
19	17 09 59.61	0.54	21 03 44.4	07.59	07.94	5	21 08 00.66	0.42	16 57 39.2	06.07	06.35
20	17 15 07.24	0.54	21 12 16.3	07.54	07.89	6	21 12 58.06	0.42	16 38 37.2	06.04	06.32
21	17 20 15.73	0.54	21 20 13.8	07.49	07.84	7	21 17 54.46	0.42	16 19 07.0	06.02	06.30
22	17 25 25.01	0.53	21 27 36.4	07.45	07.79	8	21 22 49.88	0.42	15 59 09.1	05.99	06.27
23	17 30 35.07	0.53	21 34 23.8	07.41	07.75	9	21 27 44.30	0.41	15 38 44.2	05.97	06.25
24	17 35 45.83	0.53	21 40 35.4	07.36	07.70	10	21 32 37.73	0.41	15 17 53.0	05.95	06.23
25	17 40 57.26	0.53	21 46 10.8	07.32	07.66	11	21 37 30.16	0.41	14 56 36.1	05.93	06.21
26	17 46 09.29	0.52	21 51 09.7	07.28	07.62	12	21 42 21.62	0.41	14 34 54.1	05.91	06.18
27	17 51 21.89	0.52	21 55 31.7	07.24	07.58	13	21 47 12.11	0.41	14 12 47.8	05.89	06.16
28	17 56 35.00	0.52	21 59 16.4	07.20	07.54	14	21 52 01.63	0.40	13 50 17.7	05.87	06.14
29	18 01 48.57	0.52	22 02 23.7	07.17	07.50	15	21 56 50.19	0.40	13 27 24.6	05.85	06.12
30	18 07 02.53	0.51	22 04 53.2	07.13	07.45	16	22 01 37.80	0.40	13 04 09.1	05.83	06.10
31	18 12 16.86	0.51	22 06 44.8	07.08	07.41	17	22 06 24.48	0.40	12 40 31.9	05.81	06.08
Feb. 1	18 17 31.49	0.51	22 07 58.1	07.04	07.37	18	22 11 10.23	0.39	12 16 33.7	05.79	06.06
2	18 22 46.37	0.50	22 08 33.1	07.01	07.34	19	22 15 55.08	0.39	11 52 15.3	05.77	06.04
3	18 28 01.46	0.50	22 08 29.6	06.97	07.30	20	22 20 39.05	0.39	11 27 37.3	05.75	06.02
4	18 33 16.70	0.50	22 07 47.5	06.94	07.26	21	22 25 22.13	0.39	11 02 40.5	05.73	06.00
5	18 38 32.04	0.50	22 06 26.7	06.90	07.22	22	22 30 04.37	0.39	10 37 25.5	05.71	05.98
6	18 43 47.42	0.49	22 04 27.1	06.87	07.19	23	22 34 45.78	0.39	10 11 53.1	05.70	05.96
7	18 49 02.81	0.49	22 01 48.6	06.83	07.15	24	22 39 26.37	0.38	9 46 04.0	05.68	05.94
8	18 54 18.13	0.49	21 58 31.5	06.80	07.12	25	22 44 06.17	0.38	9 19 58.9	05.66	05.92
9	18 59 33.34	0.49	21 54 35.5	06.77	07.08	26	22 48 45.21	0.38	8 53 38.5	05.64	05.90
10	19 04 48.39	0.48	21 50 00.9	06.74	07.05	27	22 53 23.52	0.38	8 27 03.5	05.62	05.88
11	19 10 03.22	0.48	21 44 47.6	06.70	07.01	28	22 58 01.12	0.38	8 00 14.7	05.60	05.86
12	19 15 17.78	0.48	21 38 55.9	06.67	06.98	29	23 02 38.05	0.38	7 33 12.7	05.59	05.85
13	19 20 32.02	0.48	21 32 25.8	06.63	06.94	30	23 07 14.34	0.37	7 05 58.3	05.57	05.83
14	19 25 45.89	0.47	21 25 17.6	06.60	06.91	31	23 11 50.02	0.37	6 38 32.0	05.55	05.81
15	19 30 59.34	0.47	S. 21 17 31.4	06.57	06.88	Apr. 1	23 16 25.13	0.37	S. 6 10 54.6	05.53	05.79

VENUS, 1928.

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AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' " "	"	"		h m s	s	° ' " "	"	"
Apr. 2	23 20 59.70	0.37	S. 5 43 06.8	05.52	05.78	May 18	02 52 35.41	0.35	N. 15 23 43.2	05.00	05.23
3	23 25 33.77	0.37	5 15 09.3	05.50	05.76	19	02 57 26.19	0.35	15 46 35.5	04.99	05.22
4	23 30 07.38	0.37	4 47 02.7	05.49	05.74	20	03 02 18.05	0.35	16 09 04.3	04.98	05.21
5	23 34 40.56	0.37	4 18 47.7	05.47	05.72	21	03 07 10.98	0.35	16 31 08.9	04.97	05.20
6	23 39 13.34	0.36	3 50 25.1	05.46	05.71	22	03 12 05.01	0.35	16 52 48.7	04.97	05.20
7	23 43 45.78	0.36	3 21 55.4	05.44	05.69	23	03 17 00.14	0.35	17 14 02.8	04.96	05.19
8	23 48 17.90	0.36	2 53 19.4	05.43	05.68	24	03 21 56.37	0.35	17 34 50.5	04.96	05.19
9	23 52 49.74	0.36	2 24 37.8	05.41	05.66	25	03 26 53.72	0.35	17 55 11.1	04.95	05.18
10	23 57 21.35	0.36	1 55 51.1	05.40	05.65	26	03 31 52.18	0.35	18 15 04.0	04.94	05.17
11	00 01 52.76	0.36	1 27 00.2	05.38	05.63	27	03 36 51.76	0.35	18 34 28.4	04.93	05.16
12	00 06 24.01	0.36	0 58 05.7	05.37	05.62	28	03 41 52.46	0.35	18 53 23.7	04.93	05.16
13	00 10 55.13	0.36	0 29 08.2	05.35	05.60	29	03 46 54.27	0.35	19 11 49.1	04.92	05.15
14	00 15 26.16	0.36	S. 0 00 08.6	05.34	05.59	30	03 51 57.19	0.35	19 29 44.1	04.92	05.15
15	00 19 57.15	0.35	N. 0 28 52.5	05.32	05.57	31	03 57 01.22	0.35	19 47 07.9	04.91	05.14
16	00 24 28.13	0.35	0 57 54.5	05.31	05.56	June 1	04 02 06.35	0.35	20 03 59.9	04.91	05.14
17	00 28 59.14	0.35	1 26 56.5	05.30	05.55	2	04 07 12.56	0.35	20 20 19.5	04.90	05.13
18	00 33 30.21	0.35	1 55 58.0	05.29	05.54	3	04 12 19.84	0.35	20 36 06.0	04.90	05.13
19	00 38 01.40	0.35	2 24 58.2	05.28	05.52	4	04 17 28.18	0.35	20 51 18.8	04.89	05.12
20	00 42 32.72	0.35	2 53 56.4	05.27	05.51	5	04 22 37.57	0.35	21 05 57.4	04.89	05.12
21	00 47 04.22	0.35	3 22 51.8	05.26	05.50	6	04 27 47.96	0.35	21 20 01.1	04.89	05.12
22	00 51 35.93	0.35	3 51 43.9	05.25	05.49	7	04 32 59.36	0.35	21 33 29.3	04.88	05.11
23	00 56 07.88	0.35	4 20 31.7	05.23	05.47	8	04 38 11.72	0.35	21 46 21.6	04.88	05.11
24	01 00 40.13	0.35	4 49 14.7	05.22	05.46	9	04 43 25.03	0.35	21 58 37.3	04.88	05.11
25	01 05 12.69	0.35	5 17 52.1	05.21	05.45	10	04 48 39.24	0.35	22 10 15.9	04.87	05.10
26	01 09 45.62	0.35	5 46 23.3	05.20	05.44	11	04 53 54.34	0.35	22 21 17.0	04.87	05.10
27	01 14 18.95	0.35	6 14 47.4	05.19	05.43	12	04 59 10.27	0.35	22 31 40.0	04.87	05.10
28	01 18 52.73	0.35	6 43 03.9	05.18	05.42	13	05 04 27.00	0.35	22 41 24.4	04.86	05.09
29	01 23 26.98	0.35	7 11 12.1	05.16	05.40	14	05 09 44.50	0.35	22 50 29.9	04.86	05.09
30	01 28 01.75	0.35	7 39 11.1	05.15	05.39	15	05 15 02.71	0.35	22 58 56.0	04.86	05.09
May 1	01 32 37.07	0.35	8 07 00.5	05.14	05.38	16	05 20 21.58	0.35	23 06 42.2	04.86	05.09
2	01 37 12.99	0.35	8 34 39.3	05.13	05.37	17	05 25 41.08	0.35	23 13 48.3	04.85	05.08
3	01 41 49.54	0.35	9 02 07.1	05.12	05.36	18	05 31 01.14	0.35	23 20 13.7	04.85	05.08
4	01 46 26.75	0.35	9 29 23.0	05.11	05.35	19	05 36 21.71	0.35	23 25 58.4	04.85	05.08
5	01 51 04.66	0.34	9 56 26.3	05.10	05.34	20	05 41 42.74	0.35	23 31 01.8	04.85	05.08
6	01 55 43.31	0.34	10 23 16.5	05.09	05.33	21	05 47 04.17	0.35	23 35 23.8	04.85	05.08
7	02 00 22.73	0.34	10 49 52.6	05.08	05.32	22	05 52 25.94	0.35	23 39 04.1	04.85	05.07
8	02 05 02.94	0.34	11 16 14.1	05.07	05.31	23	05 57 48.01	0.35	23 42 02.6	04.85	05.07
9	02 09 43.99	0.34	11 42 20.2	05.06	05.30	24	06 03 10.31	0.35	23 44 19.1	04.85	05.07
10	02 14 25.90	0.35	12 08 10.1	05.06	05.29	25	06 08 32.78	0.35	23 45 53.4	04.85	05.07
11	02 19 08.71	0.35	12 33 43.3	05.05	05.28	26	06 13 55.37	0.35	23 46 45.3	04.85	05.07
12	02 23 52.43	0.35	12 58 58.9	05.05	05.28	27	06 19 18.02	0.35	23 46 55.0	04.85	05.07
13	02 28 37.11	0.35	13 23 56.2	05.04	05.27	28	06 24 40.66	0.35	23 46 22.3	04.85	05.07
14	02 33 22.75	0.35	13 48 34.6	05.03	05.26	29	06 30 03.25	0.35	23 45 07.3	04.85	05.07
15	02 38 09.38	0.35	14 12 53.2	05.02	05.25	30	06 35 25.72	0.35	23 43 09.8	04.85	05.07
16	02 42 57.02	0.35	14 36 51.3	05.01	05.24	July 1	06 40 48.03	0.35	23 40 30.0	04.85	05.07
17	02 47 45.69	0.35	N. 15 00 28.2	05.00	05.23	2	06 46 10.10	0.35	N. 23 37 07.9	04.85	05.07

VENUS, 1928.

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Transit, Midd. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Transit, Midd. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
July 3	06 51 31.89	0.35	N. 23 33 03.7	04.85	05.07	Aug. 18	10 42 43.77	0.34	N. 9 43 01.4	05.05	05.28
4	06 56 53.35	0.35	23 28 17.4	04.85	05.07	19	10 47 21.36	0.34	9 14 46.5	05.06	05.29
5	07 02 14.41	0.35	23 22 49.3	04.85	05.07	20	10 51 58.17	0.34	8 46 16.7	05.07	05.30
6	07 07 35.03	0.35	23 16 39.6	04.85	05.07	21	10 56 34.21	0.34	8 17 32.8	05.07	05.31
7	07 12 55.15	0.35	23 07 48.4	04.85	05.07	22	11 01 09.54	0.34	7 48 35.7	05.08	05.32
8	07 18 14.74	0.35	23 02 16.1	04.85	05.08	23	11 05 44.18	0.34	7 19 26.0	05.09	05.33
9	07 23 33.73	0.35	22 54 02.9	04.85	05.08	24	11 10 18.16	0.34	6 50 04.4	05.10	05.34
10	07 28 52.08	0.35	22 45 09.0	04.85	05.08	25	11 14 51.53	0.34	6 20 31.7	05.11	05.35
11	07 34 09.74	0.35	22 35 35.0	04.85	05.08	26	11 19 24.33	0.34	5 50 48.6	05.12	05.36
12	07 39 26.66	0.35	22 25 21.0	04.85	05.08	27	11 23 56.59	0.34	5 20 55.9	05.13	05.37
13	07 44 42.81	0.35	22 14 27.5	04.85	05.08	28	11 28 28.36	0.34	4 50 54.2	05.14	05.38
14	07 49 58.14	0.35	22 02 55.0	04.86	05.09	29	11 32 59.66	0.34	4 20 44.3	05.15	05.39
15	07 55 12.61	0.35	21 50 43.7	04.86	05.09	30	11 37 30.54	0.34	3 50 26.9	05.16	05.40
16	08 00 26.18	0.35	21 37 54.1	04.86	05.09	31	11 42 01.05	0.35	3 20 02.7	05.17	05.41
17	08 05 38.81	0.35	21 24 26.9	04.86	05.09	Sept. 1	11 46 31.23	0.35	2 49 32.4	05.18	05.42
18	08 10 50.47	0.35	21 10 22.4	04.87	05.10	2	11 51 01.13	0.35	2 18 56.8	05.19	05.43
19	08 16 01.12	0.35	20 55 41.2	04.87	05.10	3	11 55 30.79	0.35	1 48 16.4	05.20	05.44
20	08 21 10.74	0.35	20 40 23.9	04.88	05.10	4	12 00 00.25	0.35	1 17 32.1	05.21	05.45
21	08 26 19.20	0.35	20 24 31.0	04.88	05.11	5	12 04 29.55	0.35	0 46 44.5	05.23	05.47
22	08 31 26.55	0.35	20 08 03.1	04.88	05.11	6	12 08 58.75	0.35	N. 0 15 54.3	05.24	05.48
23	08 36 33.12	0.35	19 51 00.8	04.89	05.12	7	12 13 27.88	0.35	S. 0 14 57.8	05.25	05.49
24	08 41 38.37	0.35	19 33 24.6	04.89	05.12	8	12 17 57.00	0.35	0 45 51.1	05.26	05.50
25	08 46 42.47	0.35	19 15 15.3	04.89	05.12	9	12 22 26.13	0.35	0 16 44.8	05.28	05.52
26	08 51 45.42	0.35	18 56 33.4	04.90	05.13	10	12 26 55.33	0.35	0 47 38.2	05.29	05.53
27	08 56 47.21	0.34	18 37 19.7	04.90	05.13	11	12 31 24.63	0.35	2 18 30.6	05.30	05.54
28	09 01 47.83	0.34	18 17 34.8	04.90	05.14	12	12 35 54.09	0.35	2 49 21.2	05.31	05.55
29	09 06 47.28	0.34	17 57 19.3	04.91	05.14	13	12 40 23.74	0.36	3 30 09.4	05.32	05.57
30	09 11 45.56	0.34	17 36 34.0	04.91	05.15	14	12 44 53.62	0.36	3 50 54.3	05.33	05.58
31	09 16 42.66	0.34	17 15 19.4	04.92	05.15	15	12 49 23.76	0.36	4 21 35.3	05.35	05.60
Aug. 1	09 21 38.60	0.34	16 53 36.3	04.93	05.16	16	12 53 54.22	0.36	4 52 11.6	05.36	05.61
2	09 26 31.18	0.34	16 31 25.3	04.94	05.17	17	12 58 25.03	0.36	5 22 42.4	05.38	05.63
3	09 31 27.00	0.34	16 08 47.2	04.94	05.17	18	13 02 56.23	0.36	5 53 07.0	05.39	05.64
4	09 36 14.48	0.34	15 45 42.6	04.95	05.18	19	13 07 27.87	0.36	6 23 24.7	05.41	05.66
5	09 41 10.82	0.34	15 22 12.4	04.95	05.18	20	13 11 59.97	0.36	6 53 34.6	05.42	05.67
6	09 46 01.05	0.34	14 58 17.0	04.96	05.19	21	13 16 32.59	0.37	7 23 36.1	05.44	05.69
7	09 50 50.14	0.34	14 33 57.3	04.96	05.19	22	13 21 05.76	0.37	7 53 28.3	05.45	05.70
8	09 55 38.24	0.34	14 09 14.0	04.97	05.20	23	13 25 39.52	0.37	8 23 10.6	05.47	05.72
9	10 00 25.22	0.34	13 44 07.8	04.98	05.21	24	13 30 13.91	0.37	8 52 42.2	05.48	05.73
10	10 05 11.16	0.34	13 18 39.4	04.99	05.22	25	13 34 48.96	0.37	9 22 02.3	05.50	05.75
11	10 09 56.08	0.34	12 52 49.6	04.99	05.23	26	13 39 24.72	0.37	9 51 10.1	05.51	05.77
12	10 14 40.00	0.34	12 26 39.0	05.00	05.23	27	13 44 01.21	0.37	10 20 05.0	05.53	05.79
13	10 19 22.03	0.34	12 00 08.5	05.01	05.24	28	13 48 38.49	0.38	10 48 46.0	05.54	05.80
14	10 24 04.91	0.34	11 33 18.6	05.02	05.25	29	13 53 16.59	0.38	11 17 12.6	05.56	05.82
15	10 28 45.95	0.34	11 06 10.2	05.02	05.26	30	13 57 55.53	0.38	11 45 24.0	05.58	05.84
16	10 33 26.10	0.34	10 38 44.0	05.03	05.26	Oct. 1	14 02 35.16	0.38	12 13 19.3	05.60	05.86
17	10 38 05.36	0.34	N. 10 11 00.9	05.04	05.27	2	14 07 16.11	0.38	S. 12 40 57.8	05.61	05.87

VENUS, 1928.

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AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Oct. 3	14 11 57.83	0.39	S. 13 08 18.8	05.63	05.89	Nov. 18	18 07 12.65	0.50	S. 25 16 26.5	06.74	07.05
4	14 16 40.53	0.39	13 35 21.6	05.65	05.91	19	18 12 35.93	0.50	25 16 54.3	06.77	07.09
5	14 21 24.25	0.39	14 02 05.4	05.67	05.93	20	18 17 59.05	0.50	25 16 37.0	06.80	07.12
6	14 26 09.02	0.39	14 28 29.3	05.69	05.95	21	18 23 21.94	0.50	25 15 34.8	06.83	07.15
7	14 30 54.86	0.39	14 54 32.7	05.71	05.97	22	18 28 44.52	0.51	25 13 47.6	06.87	07.19
8	14 35 41.80	0.40	15 20 14.6	05.72	05.99	23	18 34 06.72	0.51	25 11 15.6	06.90	07.22
9	14 40 29.87	0.40	15 45 34.5	05.74	06.01	24	18 39 28.47	0.51	25 07 59.0	06.94	07.26
10	14 45 19.09	0.40	16 10 31.5	05.76	06.03	25	18 44 49.70	0.51	25 03 57.7	06.97	07.29
11	14 50 09.46	0.40	16 35 04.7	05.78	06.05	26	18 50 10.34	0.52	24 59 12.2	07.01	07.33
12	14 55 01.00	0.40	16 59 13.4	05.80	06.07	27	18 55 30.32	0.52	24 53 42.6	07.04	07.37
13	14 59 53.74	0.41	17 22 56.7	05.82	06.09	28	19 00 49.58	0.52	24 47 29.1	07.08	07.41
14	15 04 47.67	0.41	17 46 14.0	05.84	06.11	29	19 06 08.05	0.52	24 40 32.1	07.12	07.45
15	15 09 42.81	0.41	18 09 04.3	05.86	06.13	30	19 11 25.69	0.52	24 32 51.9	07.16	07.49
16	15 14 39.16	0.41	18 31 27.0	05.88	06.15	Dec. 1	19 16 42.40	0.53	24 24 28.8	07.19	07.53
17	15 19 36.74	0.42	18 53 21.2	05.90	06.17	2	19 21 58.16	0.53	24 15 23.2	07.23	07.57
18	15 24 35.53	0.42	19 14 46.2	05.92	06.19	3	19 27 12.91	0.53	24 05 35.6	07.27	07.61
19	15 29 35.53	0.42	19 35 41.1	05.94	06.22	4	19 32 26.59	0.53	23 55 06.4	07.31	07.65
20	15 34 36.75	0.42	19 56 05.3	05.96	06.24	5	19 37 39.15	0.54	23 43 55.9	07.35	07.69
21	15 39 39.18	0.43	20 15 57.9	05.98	06.26	6	19 42 50.53	0.54	23 32 04.8	07.40	07.74
22	15 44 42.80	0.43	20 35 18.3	06.00	06.28	7	19 48 00.70	0.54	23 19 33.5	07.44	07.78
23	15 49 47.61	0.43	20 54 05.6	06.03	06.31	8	19 53 09.59	0.54	23 06 22.7	07.48	07.83
24	15 54 53.59	0.43	21 12 19.2	06.05	06.33	9	19 58 17.17	0.54	22 52 32.8	07.52	07.87
25	16 00 00.73	0.44	21 29 58.4	06.08	06.36	10	20 03 23.39	0.55	22 38 04.5	07.57	07.92
26	16 05 09.00	0.44	21 47 02.4	06.10	06.38	11	20 08 28.21	0.55	22 22 58.4	07.61	07.96
27	16 10 18.39	0.44	22 03 30.7	06.13	06.41	12	20 13 31.59	0.55	22 07 15.1	07.66	08.01
28	16 15 28.87	0.44	22 19 22.5	06.15	06.43	13	20 18 33.49	0.55	21 50 55.2	07.70	08.06
29	16 20 40.42	0.45	22 34 37.2	06.17	06.46	14	20 23 33.89	0.56	21 33 59.4	07.75	08.11
30	16 25 53.02	0.45	22 49 14.2	06.19	06.48	15	20 28 32.74	0.56	21 16 28.5	07.80	08.16
31	16 31 06.62	0.45	23 03 12.9	06.22	06.51	16	20 33 30.03	0.56	20 58 23.0	07.85	08.21
Nov. 1	16 36 21.21	0.45	23 16 32.7	06.25	06.54	17	20 38 25.71	0.56	20 39 43.8	07.89	08.26
2	16 41 36.73	0.46	23 29 13.1	06.28	06.57	18	20 43 19.77	0.56	20 20 31.5	07.94	08.31
3	16 46 53.17	0.46	23 41 13.5	06.30	06.59	19	20 48 12.17	0.57	20 00 47.1	07.99	08.36
4	16 52 10.46	0.46	23 52 33.4	06.33	06.62	20	20 53 02.92	0.57	19 40 31.2	08.05	08.42
5	16 57 28.58	0.46	24 03 12.2	06.35	06.65	21	20 57 51.98	0.57	19 19 44.6	08.10	08.47
6	17 02 47.46	0.47	24 13 09.6	06.38	06.68	22	21 02 39.33	0.57	18 58 28.0	08.15	08.52
7	17 08 07.06	0.47	24 22 25.0	06.41	06.71	23	21 07 24.97	0.58	18 36 42.4	08.20	08.58
8	17 13 27.33	0.47	24 30 58.1	06.44	06.74	24	21 12 08.90	0.58	18 14 28.4	08.26	08.64
9	17 18 48.20	0.47	24 38 48.4	06.46	06.76	25	21 16 51.10	0.58	17 51 46.9	08.31	08.70
10	17 24 09.63	0.48	24 45 55.6	06.49	06.79	26	21 21 31.58	0.59	17 28 38.6	08.37	08.76
11	17 29 31.53	0.48	24 52 19.4	06.52	06.82	27	21 26 10.32	0.59	17 05 04.5	08.43	08.82
12	17 34 53.85	0.48	24 57 59.3	06.56	06.86	28	21 30 47.34	0.59	16 41 05.2	08.49	08.88
13	17 40 16.52	0.49	25 02 55.2	06.59	06.89	29	21 35 22.65	0.59	16 16 41.5	08.54	08.94
14	17 45 39.47	0.49	25 07 06.8	06.61	06.92	30	21 39 56.24	0.60	15 51 54.3	08.60	09.00
15	17 51 02.63	0.49	25 10 33.8	06.64	06.95	31	21 44 28.14	0.60	15 26 44.2	08.67	09.07
16	17 56 25.93	0.49	25 13 16.2	06.67	06.98	32	21 48 58.35	0.60	S. 15 01 12.2	08.73	09.13
17	18 01 49.29	0.49	S. 25 15 13.8	06.70	07.02						

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semi- passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semi- passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
July 3	02 12 44.61	0.22	N. 11 47 12.7	3.25	6.11	Aug. 18	04 16 02.78	0.28	N. 20 15 54.5	3.90	7.33
4	02 15 28.34	0.22	12 01 38.9	3.26	6.13	19	04 18 36.99	0.28	20 23 08.7	3.92	7.36
5	02 18 12.03	0.22	12 15 57.4	3.27	6.15	20	04 21 10.68	0.28	20 30 13.1	3.94	7.40
6	02 20 55.70	0.22	12 30 08.0	3.28	6.17	21	04 23 43.85	0.28	20 37 07.7	3.96	7.44
7	02 23 39.33	0.22	12 44 10.7	3.29	6.19	22	04 26 16.48	0.28	20 43 52.6	3.98	7.48
8	02 26 22.93	0.23	12 58 05.4	3.30	6.21	23	04 28 48.54	0.28	20 50 27.8	4.00	7.51
9	02 29 06.49	0.23	13 11 51.9	3.32	6.24	24	04 31 20.03	0.29	20 56 53.4	4.02	7.55
10	02 31 49.99	0.23	13 25 30.1	3.33	6.26	25	04 33 50.93	0.29	21 03 09.4	4.03	7.58
11	02 34 33.44	0.23	13 39 00.0	3.34	6.28	26	04 36 21.21	0.29	21 09 15.9	4.05	7.62
12	02 37 16.83	0.23	13 52 21.4	3.35	6.30	27	04 38 50.87	0.29	21 15 13.1	4.07	7.66
13	02 40 00.15	0.23	14 05 34.1	3.37	6.33	28	04 41 19.87	0.29	21 21 01.0	4.09	7.70
14	02 42 43.39	0.23	14 18 38.1	3.38	6.35	29	04 43 48.23	0.29	21 26 39.6	4.11	7.74
15	02 45 26.54	0.23	14 31 33.2	3.39	6.37	30	04 46 15.90	0.30	21 32 09.2	4.14	7.78
16	02 48 09.59	0.23	14 44 19.4	3.40	6.39	31	04 48 42.88	0.30	21 37 29.8	4.16	7.82
17	02 50 52.54	0.24	14 56 56.5	3.41	6.42	Sept. 1	04 51 09.13	0.30	21 42 41.5	4.18	7.86
18	02 53 35.37	0.24	15 09 24.5	3.42	6.44	2	04 53 34.64	0.30	21 47 44.4	4.20	7.90
19	02 56 18.08	0.24	15 21 43.2	3.44	6.47	3	04 55 59.39	0.30	21 52 38.5	4.23	7.95
20	02 59 00.67	0.24	15 33 52.6	3.45	6.49	4	04 58 23.35	0.31	21 57 24.1	4.25	7.99
21	03 01 43.11	0.24	15 45 52.7	3.47	6.52	5	05 00 46.50	0.31	22 02 01.1	4.27	8.03
22	03 04 25.41	0.24	15 57 43.3	3.48	6.54	6	05 03 08.81	0.31	22 06 29.7	4.29	8.08
23	03 07 07.57	0.24	16 09 24.5	3.50	6.57	7	05 05 30.24	0.31	22 10 50.0	4.32	8.12
24	03 09 49.58	0.24	16 20 56.1	3.51	6.59	8	05 07 50.77	0.31	22 15 02.1	4.34	8.17
25	03 12 31.42	0.24	16 32 18.1	3.52	6.62	9	05 10 10.36	0.32	22 19 06.1	4.37	8.21
26	03 15 13.10	0.25	16 43 30.5	3.53	6.64	10	05 12 28.99	0.32	22 23 02.2	4.39	8.26
27	03 17 54.61	0.25	16 54 33.2	3.55	6.67	11	05 14 46.64	0.32	22 26 50.5	4.42	8.31
28	03 20 35.94	0.25	17 05 26.3	3.56	6.69	12	05 17 03.26	0.32	22 30 31.2	4.44	8.36
29	03 23 17.08	0.25	17 16 09.6	3.57	6.72	13	05 19 18.84	0.32	22 34 04.3	4.47	8.40
30	03 25 58.02	0.25	17 26 43.1	3.59	6.75	14	05 21 33.34	0.32	22 37 30.2	4.49	8.45
31	03 28 38.76	0.25	17 37 06.9	3.61	6.78	15	05 23 46.72	0.33	22 40 48.8	4.52	8.50
Aug. 1	03 31 19.29	0.25	17 47 20.8	3.62	6.81	16	05 25 58.97	0.33	22 44 00.5	4.55	8.56
2	03 33 59.60	0.26	17 57 24.9	3.64	6.84	17	05 28 10.05	0.33	22 47 05.3	4.58	8.61
3	03 36 39.67	0.26	18 07 19.2	3.65	6.86	18	05 30 19.94	0.33	22 50 03.5	4.61	8.66
4	03 39 19.50	0.26	18 17 03.6	3.67	6.89	19	05 32 28.62	0.34	22 52 55.3	4.64	8.71
5	03 41 59.07	0.26	18 26 38.0	3.68	6.92	20	05 34 36.05	0.34	22 55 40.9	4.66	8.77
6	03 44 38.37	0.26	18 36 02.5	3.70	6.95	21	05 36 42.22	0.34	22 58 20.4	4.69	8.82
7	03 47 17.39	0.26	18 45 17.0	3.71	6.98	22	05 38 47.09	0.34	23 00 54.0	4.72	8.88
8	03 49 56.12	0.26	18 54 21.5	3.73	7.01	23	05 40 50.63	0.34	23 03 22.0	4.75	8.93
9	03 52 34.52	0.26	19 03 16.0	3.74	7.04	24	05 42 52.81	0.35	23 05 44.6	4.78	8.99
10	03 55 12.58	0.27	19 12 00.5	3.76	7.07	25	05 44 53.62	0.35	23 08 02.0	4.82	9.05
11	03 57 50.29	0.27	19 20 34.9	3.78	7.10	26	05 46 53.01	0.35	23 10 14.3	4.85	9.11
12	04 00 27.63	0.27	19 28 59.3	3.80	7.14	27	05 48 50.96	0.35	23 12 21.9	4.88	9.17
13	04 03 04.58	0.27	19 37 13.6	3.81	7.17	28	05 50 47.44	0.36	23 14 25.0	4.91	9.23
14	04 05 41.12	0.27	19 45 17.8	3.83	7.20	29	05 52 42.42	0.36	23 16 23.7	4.94	9.29
15	04 08 17.22	0.27	19 53 12.0	3.85	7.23	30	05 54 35.85	0.36	23 18 18.3	4.97	9.35
16	04 10 52.88	0.27	20 00 56.1	3.87	7.27	Oct. 1	05 56 27.71	0.36	23 20 08.9	5.01	9.41
17	04 13 28.08	0.28	N. 20 08 30.3	3.88	7.30	2	05 58 17.95	0.37	N. 23 21 56.0	5.04	9.47

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Oct. 3	06 00 06.54	0.37	N.23 23 39.6	5.08	9.54	Nov. 18	06 39 51.62	0.53	N.24 52 25.2	7.16	13.46
4	06 01 53.43	0.37	23 25 20.0	5.11	9.61	19	06 39 28.12	0.53	24 55 44.9	7.21	13.56
5	06 03 38.58	0.37	23 26 57.4	5.15	9.68	20	06 39 00.80	0.53	24 59 08.6	7.26	13.65
6	06 05 21.94	0.38	23 28 32.1	5.18	9.75	21	06 38 29.68	0.54	25 02 36.2	7.31	13.74
7	06 07 03.46	0.38	23 30 04.3	5.22	9.81	22	06 37 54.75	0.54	25 06 07.3	7.36	13.83
8	06 08 43.09	0.38	23 31 34.3	5.25	9.88	23	06 37 16.03	0.55	25 09 41.6	7.41	13.92
9	06 10 20.79	0.38	23 33 02.4	5.29	9.95	24	06 36 33.54	0.55	25 13 18.8	7.45	14.00
10	06 11 56.51	0.39	23 34 28.8	5.33	10.03	25	06 35 47.32	0.55	25 16 58.4	7.49	14.08
11	06 13 30.21	0.39	23 35 53.7	5.37	10.10	26	06 34 57.38	0.56	25 20 40.2	7.53	14.16
12	06 15 01.83	0.39	23 37 17.4	5.41	10.18	27	06 34 03.78	0.56	25 24 23.5	7.57	14.24
13	06 16 31.34	0.40	23 38 40.2	5.45	10.25	28	06 33 06.54	0.56	25 28 08.0	7.61	14.32
14	06 17 58.67	0.40	23 40 02.3	5.49	10.33	29	06 32 05.72	0.57	25 31 53.1	7.65	14.39
15	06 19 23.80	0.40	23 41 24.1	5.53	10.40	30	06 31 01.38	0.57	25 35 38.3	7.69	14.46
16	06 20 46.68	0.41	23 42 45.8	5.57	10.48	Dec. 1	06 29 53.57	0.57	25 39 23.1	7.73	14.53
17	06 22 07.26	0.41	23 44 07.7	5.62	10.56	2	06 28 42.39	0.57	25 43 06.9	7.76	14.59
18	06 23 25.48	0.41	23 45 30.1	5.66	10.64	3	06 27 27.92	0.58	25 46 49.2	7.80	14.65
19	06 24 41.31	0.41	23 46 53.2	5.70	10.72	4	06 26 10.27	0.58	25 50 29.4	7.83	14.71
20	06 25 54.71	0.42	23 48 17.4	5.74	10.80	5	06 24 49.53	0.58	25 54 06.8	7.86	14.76
21	06 27 05.63	0.42	23 49 42.8	5.79	10.88	6	06 23 25.85	0.58	25 57 40.9	7.88	14.81
22	06 28 14.01	0.42	23 51 09.7	5.83	10.96	7	06 21 59.37	0.59	26 01 11.0	7.90	14.85
23	06 29 19.82	0.43	23 52 38.5	5.88	11.05	8	06 20 30.24	0.59	26 04 36.6	7.92	14.89
24	06 30 23.01	0.43	23 54 09.3	5.92	11.14	9	06 18 58.61	0.59	26 07 57.1	7.94	14.93
25	06 31 23.53	0.44	23 55 42.4	5.97	11.22	10	06 17 24.68	0.59	26 11 11.9	7.96	14.96
26	06 32 21.33	0.44	23 57 18.0	6.01	11.31	11	06 15 48.62	0.59	26 14 20.4	7.98	14.99
27	06 33 16.36	0.44	23 58 56.5	6.06	11.39	12	06 14 10.64	0.59	26 17 22.3	7.99	15.01
28	06 34 08.57	0.45	24 00 37.7	6.11	11.48	13	06 12 30.94	0.60	26 20 16.9	7.99	15.03
29	06 34 57.89	0.45	24 02 22.2	6.16	11.57	14	06 10 49.73	0.60	26 23 03.8	8.00	15.04
30	06 35 44.29	0.45	24 04 10.3	6.20	11.66	15	06 09 07.22	0.60	26 25 42.6	8.00	15.04
31	06 36 27.69	0.46	24 06 01.9	6.25	11.75	16	06 07 23.65	0.60	26 28 12.9	8.00	15.04
Nov 1	06 37 08.03	0.46	24 07 57.4	6.30	11.84	17	06 05 39.25	0.60	26 30 34.4	8.00	15.04
2	06 37 45.26	0.46	24 09 56.8	6.35	11.94	18	06 03 54.21	0.60	26 32 46.9	8.00	15.03
3	06 38 19.31	0.47	24 12 00.5	6.40	12.04	19	06 02 08.82	0.60	26 34 50.1	7.99	15.01
4	06 38 50.11	0.47	24 14 08.5	6.45	12.13	20	06 00 23.29	0.59	26 36 43.7	7.97	14.99
5	06 39 17.61	0.48	24 16 20.9	6.50	12.23	21	05 58 37.85	0.59	26 38 27.8	7.96	14.96
6	06 39 41.75	0.48	24 18 38.0	6.55	12.32	22	05 56 52.73	0.59	26 40 02.2	7.94	14.93
7	06 40 02.46	0.48	24 20 59.9	6.60	12.42	23	05 55 08.14	0.59	26 41 27.0	7.92	14.89
8	06 40 19.69	0.49	24 23 26.6	6.65	12.51	24	05 53 24.32	0.59	26 42 42.1	7.90	14.85
9	06 40 33.40	0.49	24 25 58.3	6.70	12.61	25	05 51 41.46	0.59	26 43 47.7	7.88	14.81
10	06 40 43.54	0.49	24 28 34.9	6.75	12.70	26	05 49 59.78	0.59	26 44 43.9	7.85	14.76
11	06 40 50.06	0.50	24 31 16.5	6.80	12.80	27	05 48 19.46	0.58	26 45 30.8	7.82	14.70
12	06 40 52.93	0.50	24 34 03.1	6.86	12.90	28	05 46 40.71	0.58	26 46 08.7	7.78	14.64
13	06 40 52.11	0.51	24 36 54.7	6.91	13.00	29	05 45 03.68	0.58	26 46 37.7	7.75	14.57
14	06 40 47.56	0.51	24 39 51.3	6.96	13.09	30	05 43 28.58	0.58	26 46 58.3	7.71	14.50
15	06 40 39.25	0.51	24 42 52.8	7.01	13.19	31	05 41 55.56	0.57	26 47 10.7	7.67	14.43
16	06 40 27.17	0.52	24 45 59.0	7.06	13.28	32	05 40 24.78	0.57	26 47 15.3	7.63	14.35
17	06 40 11.30	0.52	N.24 49 09.9	7.11	13.37				N.26 47 12.5	7.59	14.27

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AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Equat. Semi- pass. Merid.	Apparent Declination.	Polar Semi-diameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equat. Semi- pass. Merid.	Apparent Declination.	Polar Semi-diameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Jan. 1	23 49 38.14	1.29	S. 2 30 38.6	18.07	1.73	Jan. 12	23 55 28.26	1.25	S. 1 50 07.6	17.50	1.67
2	23 50 07.36	1.29	2 27 14.0	18.01	1.72	13	23 56 03.08	1.25	1 46 07.9	17.44	1.67
3	23 50 37.12	1.28	2 23 46.0	17.95	1.72	14	23 56 38.36	1.24	1 42 05.3	17.39	1.67
4	23 51 07.42	1.28	2 20 14.6	17.90	1.71	15	23 57 14.11	1.24	1 37 59.7	17.35	1.66
5	23 51 38.25	1.28	2 16 39.9	17.85	1.71	16	23 57 50.32	1.24	1 33 51.4	17.30	1.66
6	23 52 09.60	1.27	2 13 01.9	17.79	1.70	17	23 58 26.97	1.23	1 29 40.2	17.26	1.65
7	23 52 41.46	1.27	2 09 20.7	17.74	1.70	18	23 59 04.07	1.23	1 25 26.3	17.21	1.65
8	23 53 13.83	1.26	2 05 36.3	17.69	1.69	19	23 59 41.61	1.23	1 21 09.7	17.17	1.64
9	23 53 46.70	1.26	2 01 48.7	17.64	1.69	20	00 00 19.58	1.22	1 16 50.5	17.12	1.64
10	23 54 20.07	1.26	1 57 58.0	17.59	1.68	21	00 00 57.98	1.22	1 12 28.6	17.08	1.64
11	23 54 53.93	1.25	S. 1 54 04.3	17.55	1.68	22	00 01 36.79	1.22	S. 1 08 04.1	17.03	1.63

June 24	02 08 04.95	1.24	N. 11 43 00.0	17.00	1.63	June 29	02 11 23.89	1.26	N. 11 59 35.3	17.21	1.65
25	02 08 45.52	1.24	11 46 24.4	17.04	1.63	30	02 12 02.47	1.26	12 02 46.4	17.25	1.65
26	02 09 25.70	1.25	11 49 46.1	17.09	1.64	July 1	02 12 40.64	1.26	12 05 54.7	17.30	1.66
27	02 10 05.50	1.25	11 53 05.2	17.13	1.64	2	02 13 18.39	1.27	12 09 00.3	17.35	1.66
28	02 10 44.90	1.25	N. 11 56 21.6	17.17	1.64	3	02 13 55.71	1.27	N. 12 12 03.2	17.39	1.67

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JUPITER, 1928.

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Equal. Semid. passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equal. Semid. passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' " "	"	"		h m s	s	° ' " "	"	"
July 4	02 14 32.60	1.27	N. 12 15 03.3	17.43	1.67	Aug. 19	02 32 55.93	1.47	N. 13 37 12.3	20.03	1.92
5	02 15 09.06	1.28	12 18 00.6	17.48	1.67	20	02 33 04.41	1.48	13 37 39.6	20.10	1.92
6	02 15 45.06	1.28	12 20 55.1	17.53	1.68	21	02 33 12.14	1.48	13 38 03.2	20.17	1.93
7	02 16 20.62	1.29	12 23 46.8	17.57	1.68	22	02 33 19.11	1.49	13 38 23.2	20.23	1.94
8	02 16 55.71	1.29	12 26 35.6	17.62	1.69	23	02 33 25.33	1.49	13 38 39.6	20.29	1.94
9	02 17 30.34	1.29	12 29 21.6	17.67	1.69	24	02 33 30.77	1.50	13 38 52.3	20.35	1.95
10	02 18 04.49	1.30	12 32 04.7	17.72	1.70	25	02 33 35.46	1.50	13 39 01.4	20.42	1.96
11	02 18 38.15	1.30	12 34 44.8	17.77	1.70	26	02 33 39.37	1.51	13 39 06.8	20.48	1.96
12	02 19 11.33	1.30	12 37 22.0	17.82	1.71	27	02 33 42.52	1.51	13 39 08.6	20.55	1.97
13	02 19 44.00	1.31	12 39 56.3	17.87	1.71	28	02 33 44.90	1.52	13 39 06.8	20.61	1.97
14	02 20 16.17	1.31	12 42 27.5	17.92	1.72	29	02 33 46.50	1.52	13 39 01.3	20.68	1.98
15	02 20 47.81	1.32	12 44 55.6	17.97	1.72	30	02 33 47.32	1.53	13 38 52.2	20.74	1.99
16	02 21 18.94	1.32	12 47 20.8	18.03	1.73	31	02 33 47.37	1.53	13 38 39.4	20.81	1.99
17	02 21 49.51	1.32	12 49 42.9	18.08	1.73	Sept. 1	02 33 46.65	1.53	13 38 23.0	20.87	2.00
18	02 22 19.58	1.33	12 52 01.9	18.13	1.74	2	02 33 45.14	1.54	13 38 02.9	20.93	2.00
19	02 22 49.08	1.33	12 54 17.7	18.18	1.74	3	02 33 42.85	1.54	13 37 39.2	20.99	2.01
20	02 23 18.04	1.34	12 56 30.5	18.24	1.75	4	02 33 39.79	1.55	13 37 11.9	21.06	2.02
21	02 23 46.43	1.34	12 58 40.1	18.29	1.75	5	02 33 35.94	1.55	13 36 41.0	21.12	2.02
22	02 24 14.25	1.35	13 00 46.4	18.35	1.76	6	02 33 31.31	1.56	13 36 06.4	21.18	2.03
23	02 24 41.50	1.35	13 02 49.6	18.40	1.76	7	02 33 25.90	1.56	13 35 28.2	21.24	2.03
24	02 25 08.16	1.35	13 04 49.6	18.46	1.77	8	02 33 19.71	1.56	13 34 46.3	21.31	2.04
25	02 25 34.24	1.36	13 06 46.3	18.51	1.77	9	02 33 12.74	1.57	13 34 00.8	21.37	2.05
26	02 25 59.72	1.36	13 08 39.9	18.57	1.78	10	02 33 04.98	1.57	13 33 11.6	21.42	2.05
27	02 26 24.61	1.37	13 10 30.1	18.62	1.78	11	02 32 56.45	1.58	13 32 18.9	21.48	2.06
28	02 26 48.89	1.37	13 12 17.2	18.68	1.79	12	02 32 47.16	1.58	13 31 22.7	21.55	2.06
29	02 27 12.55	1.37	13 14 00.9	18.74	1.79	13	02 32 37.10	1.59	13 30 22.9	21.61	2.07
30	02 27 35.60	1.38	13 15 41.4	18.80	1.80	14	02 32 26.27	1.59	13 29 19.5	21.66	2.07
31	02 27 58.02	1.38	13 17 18.5	18.85	1.81	15	02 32 14.68	1.59	13 28 12.6	21.72	2.08
Aug. 1	02 28 19.80	1.39	13 18 52.4	18.91	1.81	16	02 32 02.34	1.60	13 27 02.3	21.78	2.09
2	02 28 40.95	1.39	13 20 22.9	18.97	1.82	17	02 31 49.27	1.60	13 25 48.5	21.84	2.09
3	02 29 01.45	1.40	13 21 50.0	19.04	1.82	18	02 31 35.45	1.61	13 24 31.3	21.89	2.10
4	02 29 21.30	1.40	13 23 13.8	19.10	1.83	19	02 31 20.91	1.61	13 23 10.8	21.94	2.10
5	02 29 40.49	1.41	13 24 34.2	19.15	1.83	20	02 31 05.65	1.61	13 21 46.9	22.00	2.11
6	02 29 59.02	1.41	13 25 51.2	19.21	1.84	21	02 30 49.69	1.62	13 20 19.8	22.05	2.11
7	02 30 16.87	1.42	13 27 04.7	19.28	1.85	22	02 30 33.02	1.62	13 18 49.4	22.10	2.12
8	02 30 34.01	1.42	13 28 14.8	19.34	1.85	23	02 30 15.67	1.62	13 17 15.8	22.15	2.12
9	02 30 50.50	1.43	13 29 21.5	19.41	1.86	24	02 29 57.64	1.63	13 15 39.1	22.20	2.13
10	02 31 06.29	1.43	13 30 24.6	19.47	1.86	25	02 29 38.95	1.63	13 13 59.4	22.25	2.13
11	02 31 21.36	1.43	13 31 24.2	19.53	1.87	26	02 29 19.59	1.63	13 12 16.6	22.30	2.14
12	02 31 35.73	1.44	13 32 20.3	19.59	1.88	27	02 28 59.59	1.64	13 10 30.9	22.35	2.14
13	02 31 49.38	1.44	13 33 12.8	19.66	1.88	28	02 28 38.96	1.64	13 08 42.2	22.39	2.14
14	02 32 02.31	1.45	13 34 01.7	19.72	1.89	29	02 28 17.72	1.65	13 06 50.7	22.44	2.15
15	02 32 14.51	1.45	13 34 47.0	19.78	1.89	30	02 27 55.87	1.65	13 04 56.3	22.49	2.15
16	02 32 25.97	1.46	13 35 28.8	19.84	1.90	Oct. 1	02 27 33.42	1.65	13 02 59.2	22.53	2.16
17	02 32 36.70	1.46	13 36 06.9	19.91	1.91	2	02 27 10.40	1.65	13 00 59.4	22.57	2.16
18	02 32 46.69	1.47	N. 13 36 41.4	19.97	1.91	3	02 26 46.81	1.66	N. 12 58 57.1	22.61	2.17

JUPITER, 1928.

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AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Equat. Semi- passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equat. Semi- passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Oct. 4	02 26 22.66	1.66	N.12 56 52.2	22.65	2.17	Nov. 18	02 03 53.20	1.65	N.11 04 05.4	22.71	2.17
5	02 25 57.98	1.66	12 54 44.8	22.69	2.17	19	02 03 27.26	1.65	11 02 00.2	22.67	2.17
6	02 25 32.78	1.66	12 52 35.0	22.73	2.18	20	02 03 01.82	1.65	10 59 57.8	22.62	2.17
7	02 25 07.07	1.67	12 50 22.9	22.77	2.18	21	02 02 36.90	1.64	10 57 58.3	22.58	2.16
8	02 24 40.87	1.67	12 48 08.4	22.80	2.18	22	02 02 12.52	1.64	10 56 01.8	22.54	2.16
9	02 24 14.21	1.67	12 45 51.7	22.83	2.19	23	02 01 48.68	1.64	10 54 08.4	22.50	2.15
10	02 23 47.09	1.67	12 43 33.0	22.86	2.19	24	02 01 25.40	1.63	10 52 18.2	22.46	2.15
11	02 23 19.55	1.68	12 41 12.3	22.89	2.19	25	02 01 02.70	1.63	10 50 31.2	22.41	2.15
12	02 22 51.60	1.68	12 38 49.7	22.91	2.19	26	02 00 40.58	1.63	10 48 47.6	22.36	2.14
13	02 22 23.26	1.68	12 36 25.3	22.94	2.20	27	02 00 19.07	1.62	10 47 07.3	22.32	2.14
14	02 21 54.56	1.68	12 33 59.2	22.97	2.20	28	01 59 58.18	1.62	10 45 30.6	22.27	2.13
15	02 21 25.51	1.68	12 31 31.6	22.99	2.20	29	01 59 37.91	1.61	10 43 57.4	22.22	2.13
16	02 20 56.14	1.68	12 29 02.5	23.01	2.20	30	01 59 18.29	1.61	10 42 27.8	22.16	2.12
17	02 20 26.47	1.68	12 26 32.0	23.03	2.21	Dec. 1	01 58 59.32	1.61	10 41 01.8	22.11	2.12
18	02 19 56.53	1.69	12 24 00.3	23.05	2.21	2	01 58 41.02	1.60	10 39 39.6	22.06	2.11
19	02 19 26.33	1.69	12 21 27.5	23.07	2.21	3	01 58 23.39	1.60	10 38 21.2	22.00	2.11
20	02 18 55.90	1.69	12 18 53.6	23.08	2.21	4	01 58 06.45	1.59	10 37 06.6	21.94	2.10
21	02 18 25.27	1.69	12 16 18.9	23.09	2.21	5	01 57 50.20	1.59	10 35 56.0	21.89	2.10
22	02 17 54.45	1.69	12 13 43.4	23.10	2.21	6	01 57 34.67	1.59	10 34 49.3	21.83	2.09
23	02 17 23.48	1.69	12 11 07.3	23.11	2.21	7	01 57 19.86	1.58	10 33 46.7	21.77	2.08
24	02 16 52.38	1.69	12 08 30.6	23.12	2.21	8	01 57 05.77	1.58	10 32 48.1	21.71	2.08
25	02 16 21.17	1.69	12 05 53.5	23.12	2.21	9	01 56 52.42	1.57	10 31 53.7	21.65	2.07
25	02 15 49.87	1.69	12 03 16.2	23.13	2.22	10	01 56 39.82	1.57	10 31 03.6	21.59	2.07
26	02 15 18.50	1.69	12 00 38.7	23.13	2.22	11	01 56 27.98	1.56	10 30 17.6	21.53	2.06
27	02 14 47.10	1.69	11 58 01.1	23.13	2.22	12	01 56 16.89	1.56	10 29 35.9	21.47	2.06
28	02 14 15.69	1.69	11 55 23.6	23.12	2.21	13	01 56 06.57	1.55	10 28 58.5	21.41	2.05
29	02 13 44.28	1.69	11 52 46.2	23.12	2.21	14	01 55 57.02	1.55	10 28 25.4	21.35	2.04
30	02 13 12.89	1.69	11 50 09.1	23.11	2.21	15	01 55 48.25	1.54	10 27 56.6	21.28	2.04
31	02 12 41.56	1.69	11 47 32.5	23.11	2.21	16	01 55 40.26	1.54	10 27 32.2	21.21	2.03
Nov. 1	02 12 10.31	1.69	11 44 56.4	23.10	2.21	17	01 55 33.06	1.54	10 27 12.2	21.15	2.03
2	02 11 39.15	1.68	11 42 21.0	23.09	2.21	18	01 55 26.64	1.53	10 26 56.6	21.09	2.02
3	02 11 08.11	1.68	11 39 46.3	23.08	2.21	19	01 55 21.01	1.53	10 26 45.4	21.03	2.01
4	02 10 37.22	1.68	11 37 12.5	23.07	2.21	20	01 55 16.18	1.52	10 26 38.6	20.96	2.01
5	02 10 06.50	1.68	11 34 39.8	23.06	2.21	21	01 55 12.13	1.52	10 26 36.2	20.90	2.00
6	02 09 35.97	1.68	11 32 08.2	23.04	2.21	22	01 55 08.87	1.51	10 26 38.2	20.83	1.99
7	02 09 05.66	1.68	11 29 37.9	23.02	2.20	23	01 55 06.41	1.51	10 26 44.6	20.76	1.99
8	02 08 35.59	1.68	11 27 09.0	23.00	2.20	24	01 55 04.74	1.50	10 26 55.4	20.69	1.98
9	02 08 05.79	1.67	11 24 41.7	22.98	2.20	25	01 55 03.86	1.50	10 27 10.5	20.63	1.98
10	02 07 36.27	1.67	11 22 16.0	22.96	2.20	26	01 55 03.78	1.49	10 27 30.0	20.56	1.97
11	02 07 07.06	1.67	11 19 52.1	22.93	2.20	27	01 55 04.48	1.49	10 27 53.8	20.50	1.96
12	02 06 38.19	1.67	11 17 30.1	22.90	2.19	28	01 55 05.97	1.48	10 28 21.9	20.43	1.96
13	02 06 09.68	1.67	11 15 10.2	22.87	2.19	29	01 55 08.24	1.48	10 28 54.4	20.36	1.95
14	02 05 41.55	1.66	11 12 52.5	22.84	2.19	30	01 55 11.30	1.47	10 29 31.1	20.29	1.94
15	02 05 13.81	1.66	11 10 37.0	22.81	2.18	31	01 55 15.14	1.47	10 30 12.1	20.23	1.94
16	02 04 46.49	1.66	11 08 23.9	22.78	2.18	32	01 55 19.76	1.46	N.10 30 57.4	20.16	1.93
17	02 04 19.61	1.65	N.11 06 13.4	22.75	2.18						

SATURN, 1928.

AT TRANSIT AT GREENWICH.

Date	Apparent Right Ascension.	Sid. Time of Equat. Semi- passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date	Apparent Right Ascension.	Sid. Time of Equat. Semi- passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Feb 7	17 04 30.66	0.57	S. 21 16 14.6	7.13	0.84	Mar. 24	17 13 12.71	0.61	S. 21 22 41.1	7.67	0.91
8	17 04 50.26	0.57	21 16 36.4	7.14	0.84	25	17 13 14.52	0.61	21 22 37.1	7.68	0.91
9	17 05 00.55	0.57	21 16 57.5	7.15	0.84	26	17 13 15.89	0.62	21 22 32.7	7.69	0.91
10	17 05 28.51	0.57	21 17 18.0	7.16	0.85	27	17 13 16.84	0.62	21 22 27.7	7.70	0.91
11	17 05 47.15	0.57	21 17 37.8	7.17	0.85	28	17 13 17.36	0.62	21 22 22.3	7.72	0.91
12	17 06 05.47	0.57	21 17 57.0	7.18	0.85	29	17 13 17.45	0.62	21 22 16.4	7.73	0.91
13	17 06 23.45	0.57	21 18 15.6	7.19	0.85	30	17 13 17.12	0.62	21 22 10.2	7.74	0.91
14	17 06 41.10	0.58	21 18 33.5	7.20	0.85	31	17 13 16.37	0.62	21 22 03.5	7.76	0.92
15	17 06 58.42	0.58	21 18 50.8	7.21	0.85	Apr. 1	17 13 15.19	0.62	21 21 56.4	7.77	0.92
16	17 07 15.38	0.58	21 19 07.5	7.22	0.85	2	17 13 13.59	0.62	21 21 48.8	7.78	0.92
17	17 07 32.00	0.58	21 19 23.5	7.23	0.85	3	17 13 11.58	0.62	21 21 40.9	7.79	0.92
18	17 07 48.26	0.58	21 19 38.9	7.24	0.85	4	17 13 09.14	0.62	21 21 32.5	7.80	0.92
19	17 08 04.18	0.58	21 19 53.7	7.25	0.86	5	17 13 06.29	0.63	21 21 23.7	7.82	0.92
20	17 08 19.73	0.58	21 20 07.9	7.26	0.86	6	17 13 03.03	0.63	21 21 14.5	7.83	0.92
21	17 08 34.92	0.58	21 20 21.5	7.27	0.86	7	17 12 59.35	0.63	21 21 04.9	7.84	0.93
22	17 08 49.74	0.58	21 20 34.4	7.28	0.86	8	17 12 55.26	0.63	21 20 54.9	7.85	0.93
23	17 09 04.19	0.58	21 20 46.8	7.29	0.86	9	17 12 50.75	0.63	21 20 44.4	7.87	0.93
24	17 09 18.27	0.58	21 20 58.6	7.30	0.86	10	17 12 45.84	0.63	21 20 33.6	7.88	0.93
25	17 09 31.06	0.59	21 21 09.7	7.31	0.86	11	17 12 40.53	0.63	21 20 22.4	7.89	0.93
26	17 09 45.28	0.59	21 21 20.3	7.32	0.86	12	17 12 34.82	0.63	21 20 10.8	7.90	0.93
27	17 09 58.21	0.59	21 21 30.3	7.34	0.87	13	17 12 28.70	0.63	21 19 58.8	7.92	0.93
28	17 10 10.75	0.59	21 21 39.7	7.35	0.87	14	17 12 22.18	0.63	21 19 46.4	7.93	0.93
29	17 10 22.91	0.59	21 21 48.5	7.36	0.87	15	17 12 15.27	0.63	21 19 33.7	7.94	0.94
Mar. 1	17 10 34.68	0.59	21 21 56.7	7.37	0.87	16	17 12 07.96	0.64	21 19 20.6	7.95	0.94
2	17 10 46.06	0.59	21 22 04.4	7.38	0.87	17	17 12 00.27	0.64	21 19 07.1	7.96	0.94
3	17 10 57.03	0.59	21 22 11.6	7.40	0.87	18	17 11 52.18	0.64	21 18 53.2	7.97	0.94
4	17 11 07.61	0.59	21 22 18.2	7.41	0.87	19	17 11 43.72	0.64	21 18 39.0	7.98	0.94
5	17 11 17.79	0.59	21 22 24.2	7.42	0.88	20	17 11 34.88	0.64	21 18 24.3	7.99	0.94
6	17 11 27.57	0.59	21 22 29.8	7.43	0.88	21	17 11 25.67	0.64	21 18 09.3	8.00	0.94
7	17 11 36.95	0.60	21 22 34.7	7.44	0.88	22	17 11 16.10	0.64	21 17 53.9	8.01	0.95
8	17 11 45.93	0.60	21 22 39.2	7.46	0.88	23	17 11 06.15	0.64	21 17 38.3	8.02	0.95
9	17 11 54.50	0.60	21 22 43.1	7.47	0.88	24	17 10 55.85	0.64	21 17 22.3	8.03	0.95
10	17 12 02.65	0.60	21 22 46.5	7.48	0.88	25	17 10 45.21	0.64	21 17 06.0	8.04	0.95
11	17 12 10.19	0.60	21 22 49.4	7.49	0.88	26	17 10 34.21	0.64	21 16 49.3	8.05	0.95
12	17 12 17.71	0.60	21 22 51.7	7.50	0.89	27	17 10 22.88	0.64	21 16 32.3	8.06	0.95
13	17 12 24.63	0.60	21 22 53.5	7.52	0.89	28	17 10 11.21	0.64	21 16 15.0	8.07	0.95
14	17 12 31.12	0.60	21 22 54.9	7.53	0.89	29	17 09 59.22	0.65	21 15 57.4	8.08	0.95
15	17 12 37.19	0.60	21 22 55.7	7.54	0.89	30	17 09 46.90	0.65	21 15 39.5	8.09	0.95
16	17 12 42.85	0.61	21 22 56.1	7.56	0.89	May 1	17 09 34.27	0.65	21 15 21.3	8.10	0.96
17	17 12 48.08	0.61	21 22 55.9	7.57	0.89	2	17 09 21.33	0.65	21 15 02.9	8.11	0.96
18	17 12 52.88	0.61	21 22 55.3	7.59	0.90	3	17 09 08.09	0.65	21 14 44.1	8.12	0.96
19	17 12 57.26	0.61	21 22 54.1	7.60	0.90	4	17 08 54.54	0.65	21 14 25.0	8.13	0.96
20	17 13 01.20	0.61	21 22 52.5	7.61	0.90	5	17 08 40.71	0.65	21 14 05.7	8.14	0.96
21	17 13 04.72	0.61	21 22 50.3	7.63	0.90	6	17 08 26.60	0.65	21 13 46.1	8.15	0.96
22	17 13 07.82	0.61	21 22 47.7	7.64	0.90	7	17 08 12.21	0.65	21 13 26.2	8.15	0.96
23	17 13 10.48	0.61	S. 21 22 44.7	7.66	0.90	8	17 07 57.54	0.65	S. 21 13 06.0	8.16	0.96

SATURN, 1928.

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AT TRANSIT AT GREENWICH.

	Apparent Right Ascension.	Sid. Time of Equat. Scenid. passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equat. Scenid. passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
June 23	16 53 57.81	0.66	S. 20 55 21.3	8.24	0.97	June 23	16 53 57.81	0.66	S. 20 55 21.3	8.24	0.97
24	16 53 40.34	0.66	20 55 00.8	8.24	0.97	24	16 53 40.34	0.66	20 55 00.8	8.24	0.97
25	16 53 23.05	0.66	20 54 40.7	8.23	0.97	25	16 53 23.05	0.66	20 54 40.7	8.23	0.97
26	16 53 05.93	0.66	20 54 21.0	8.22	0.97	26	16 53 05.93	0.66	20 54 21.0	8.22	0.97
27	16 52 48.99	0.66	20 54 01.7	8.22	0.97	27	16 52 48.99	0.66	20 54 01.7	8.22	0.97
28	16 52 32.25	0.66	20 53 42.8	8.21	0.97	28	16 52 32.25	0.66	20 53 42.8	8.21	0.97
29	16 52 15.71	0.65	20 53 24.2	8.21	0.97	29	16 52 15.71	0.65	20 53 24.2	8.21	0.97
30	16 51 59.37	0.65	20 53 06.0	8.20	0.97	30	16 51 59.37	0.65	20 53 06.0	8.20	0.97
July 1	16 51 43.25	0.65	20 52 48.2	8.19	0.97	July 1	16 51 43.25	0.65	20 52 48.2	8.19	0.97
2	16 51 27.35	0.65	20 52 30.8	8.19	0.97	2	16 51 27.35	0.65	20 52 30.8	8.19	0.97
3	16 51 11.68	0.65	20 52 13.9	8.18	0.97	3	16 51 11.68	0.65	20 52 13.9	8.18	0.97
4	16 50 56.25	0.65	20 51 57.4	8.17	0.96	4	16 50 56.25	0.65	20 51 57.4	8.17	0.96
5	16 50 41.05	0.65	20 51 41.4	8.17	0.96	5	16 50 41.05	0.65	20 51 41.4	8.17	0.96
6	16 50 26.11	0.65	20 51 25.8	8.16	0.96	6	16 50 26.11	0.65	20 51 25.8	8.16	0.96
7	16 50 11.42	0.65	20 51 10.8	8.16	0.96	7	16 50 11.42	0.65	20 51 10.8	8.16	0.96
8	16 49 57.00	0.65	20 50 56.2	8.15	0.96	8	16 49 57.00	0.65	20 50 56.2	8.15	0.96
9	16 49 42.85	0.65	20 50 42.1	8.14	0.96	9	16 49 42.85	0.65	20 50 42.1	8.14	0.96
10	16 49 28.97	0.65	20 50 28.5	8.13	0.96	10	16 49 28.97	0.65	20 50 28.5	8.13	0.96
11	16 49 15.38	0.65	20 50 15.5	8.12	0.96	11	16 49 15.38	0.65	20 50 15.5	8.12	0.96
12	16 49 02.08	0.65	20 50 03.0	8.12	0.96	12	16 49 02.08	0.65	20 50 03.0	8.12	0.96
13	16 48 49.07	0.65	20 49 51.1	8.11	0.96	13	16 48 49.07	0.65	20 49 51.1	8.11	0.96
14	16 48 36.36	0.64	20 49 39.8	8.10	0.96	14	16 48 36.36	0.64	20 49 39.8	8.10	0.96
15	16 48 23.97	0.64	20 49 29.1	8.09	0.95	15	16 48 23.97	0.64	20 49 29.1	8.09	0.95
16	16 48 11.90	0.64	20 49 19.0	8.08	0.95	16	16 48 11.90	0.64	20 49 19.0	8.08	0.95
17	16 48 00.14	0.64	20 49 09.6	8.07	0.95	17	16 48 00.14	0.64	20 49 09.6	8.07	0.95
18	16 47 48.72	0.64	20 49 00.7	8.06	0.95	18	16 47 48.72	0.64	20 49 00.7	8.06	0.95
19	16 47 37.62	0.64	20 48 52.5	8.05	0.95	19	16 47 37.62	0.64	20 48 52.5	8.05	0.95
20	16 47 26.87	0.64	20 48 44.9	8.04	0.95	20	16 47 26.87	0.64	20 48 44.9	8.04	0.95
21	16 47 16.45	0.64	20 48 38.0	8.02	0.95	21	16 47 16.45	0.64	20 48 38.0	8.02	0.95
22	16 47 06.39	0.64	20 48 31.8	8.01	0.95	22	16 47 06.39	0.64	20 48 31.8	8.01	0.95
23	16 46 56.68	0.64	20 48 26.3	8.00	0.95	23	16 46 56.68	0.64	20 48 26.3	8.00	0.95
24	16 46 47.32	0.64	20 48 21.4	7.99	0.94	24	16 46 47.32	0.64	20 48 21.4	7.99	0.94
25	16 46 38.32	0.64	20 48 17.2	7.98	0.94	25	16 46 38.32	0.64	20 48 17.2	7.98	0.94
26	16 46 29.68	0.64	20 48 13.3	7.97	0.94	26	16 46 29.68	0.64	20 48 13.3	7.97	0.94
27	16 46 21.41	0.63	20 48 11.0	7.96	0.94	27	16 46 21.41	0.63	20 48 11.0	7.96	0.94
28	16 46 13.51	0.63	20 48 08.9	7.95	0.94	28	16 46 13.51	0.63	20 48 08.9	7.95	0.94
29	16 46 05.98	0.63	20 48 07.5	7.94	0.94	29	16 46 05.98	0.63	20 48 07.5	7.94	0.94
30	16 45 58.83	0.63	20 48 06.9	7.93	0.94	30	16 45 58.83	0.63	20 48 06.9	7.93	0.94
31	16 45 52.05	0.63	20 48 06.9	7.91	0.93	31	16 45 52.05	0.63	20 48 06.9	7.91	0.93
Aug. 1	16 45 45.66	0.63	20 48 07.7	7.90	0.93	Aug. 1	16 45 45.66	0.63	20 48 07.7	7.90	0.93
2	16 45 39.65	0.63	20 48 09.2	7.89	0.93	2	16 45 39.65	0.63	20 48 09.2	7.89	0.93
3	16 45 34.03	0.63	20 48 11.4	7.88	0.93	3	16 45 34.03	0.63	20 48 11.4	7.88	0.93
4	16 45 28.80	0.63	20 48 14.4	7.87	0.93	4	16 45 28.80	0.63	20 48 14.4	7.87	0.93
5	16 45 23.95	0.63	20 48 18.2	7.86	0.93	5	16 45 23.95	0.63	20 48 18.2	7.86	0.93
6	16 45 19.50	0.63	20 48 22.6	7.85	0.93	6	16 45 19.50	0.63	20 48 22.6	7.85	0.93
7	16 45 15.45	0.62	S. 20 48 27.8	7.84	0.92	7	16 45 15.45	0.62	S. 20 48 27.8	7.84	0.92

SATURN, 1928.

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Equat. Semi- passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equat. Semi- passg. Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Aug. 8	16 45 11.79	0.62	S. 20 48 33.8	7.83	0.92	Sept. 6	16 46 23.27	0.60	S. 20 56 49.3	7.45	0.88
9	16 45 08.53	0.62	20 48 40.5	7.82	0.92	7	16 46 31.81	0.59	20 57 16.8	7.44	0.88
10	16 45 05.68	0.62	20 48 47.9	7.80	0.92	8	16 46 40.75	0.59	20 57 44.9	7.43	0.88
11	16 45 03.22	0.62	20 48 56.1	7.79	0.92	9	16 46 50.08	0.59	20 58 13.7	7.42	0.88
12	16 45 01.18	0.62	20 49 05.1	7.78	0.92	10	16 46 59.79	0.59	20 58 43.1	7.40	0.87
13	16 44 59.54	0.62	20 49 14.9	7.77	0.92	11	16 47 09.90	0.59	20 59 13.0	7.39	0.87
14	16 44 58.32	0.62	20 49 25.4	7.76	0.91	12	16 47 20.39	0.59	20 59 43.5	7.38	0.87
15	16 44 57.50	0.62	20 49 36.7	7.74	0.91	13	16 47 31.28	0.59	21 00 14.6	7.37	0.87
16	16 44 57.10	0.62	20 49 48.7	7.73	0.91	14	16 47 42.56	0.59	21 00 46.3	7.36	0.87
17	16 44 57.10	0.61	20 50 01.5	7.72	0.91	15	16 47 54.22	0.59	21 01 18.6	7.34	0.87
18	16 44 57.52	0.61	20 50 15.0	7.71	0.91	16	16 48 06.25	0.59	21 01 51.4	7.33	0.87
19	16 44 58.35	0.61	20 50 29.3	7.70	0.91	17	16 48 18.66	0.58	21 02 24.7	7.32	0.86
20	16 44 59.60	0.61	20 50 44.3	7.68	0.91	18	16 48 31.44	0.58	21 02 58.6	7.31	0.86
21	16 45 01.26	0.61	20 51 00.1	7.67	0.90	19	16 48 44.59	0.58	21 03 33.0	7.30	0.86
22	16 45 03.33	0.61	20 51 16.7	7.66	0.90	20	16 48 58.11	0.58	21 04 07.8	7.29	0.86
23	16 45 05.81	0.61	20 51 34.0	7.65	0.90	21	16 49 11.99	0.58	21 04 43.1	7.28	0.86
24	16 45 08.70	0.61	20 51 51.9	7.63	0.90	22	16 49 26.23	0.58	21 05 18.9	7.27	0.86
25	16 45 12.00	0.61	20 52 10.7	7.61	0.90	23	16 49 40.83	0.58	21 05 55.1	7.26	0.86
26	16 45 15.71	0.61	20 52 30.1	7.60	0.90	24	16 49 55.78	0.58	21 06 31.8	7.25	0.86
27	16 45 19.84	0.60	20 52 50.2	7.59	0.90	25	16 50 11.09	0.58	21 07 08.9	7.23	0.85
28	16 45 24.37	0.60	20 53 11.1	7.57	0.89	26	16 50 26.74	0.58	21 07 46.4	7.22	0.85
29	16 45 29.31	0.60	20 53 32.6	7.56	0.89	27	16 50 42.74	0.58	21 08 24.3	7.21	0.85
30	16 45 34.65	0.60	20 53 54.9	7.54	0.89	28	16 50 59.08	0.57	21 09 02.6	7.20	0.85
31	16 45 40.40	0.60	20 54 17.8	7.53	0.89	29	16 51 15.75	0.57	21 09 41.3	7.19	0.85
Sept. 1	16 45 46.54	0.60	20 54 41.4	7.51	0.89	30	16 51 32.76	0.57	21 10 20.3	7.17	0.85
2	16 45 53.08	0.60	20 55 05.7	7.50	0.89	Oct. 1	16 51 50.10	0.57	21 10 59.7	7.16	0.85
3	16 46 00.03	0.60	20 55 30.6	7.49	0.88	2	16 52 07.77	0.57	21 11 39.4	7.15	0.84
4	16 46 07.38	0.60	20 55 56.2	7.48	0.88	3	16 52 25.77	0.57	21 12 19.4	7.14	0.84
5	16 46 15.12	0.60	S. 20 56 22.4	7.46	0.88	4	16 52 44.09	0.57	S. 21 12 59.8	7.13	0.84

URANUS, 1928.

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AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Jan. 1	00 00 07.30	0.11	S. 0 46 41.5	1.7	0.4	Jan. 12	00 01 04.36	0.11	S. 0 40 02.7	1.7	0.4
2	00 00 11.61	0.11	0 46 10.8	1.7	0.4	13	00 01 10.57	0.11	0 39 19.9	1.7	0.4
3	00 00 16.11	0.11	0 45 39.0	1.7	0.4	14	00 01 16.94	0.11	0 38 36.1	1.7	0.4
4	00 00 20.78	0.11	0 45 06.1	1.7	0.4	15	00 01 23.48	0.11	0 37 51.2	1.7	0.4
5	00 00 25.63	0.11	0 44 32.0	1.7	0.4	16	00 01 30.18	0.11	0 37 05.3	1.7	0.4
6	00 00 30.65	0.11	0 43 56.8	1.7	0.4	17	00 01 37.03	0.11	0 36 18.3	1.7	0.4
7	00 00 35.84	0.11	0 43 20.5	1.7	0.4	18	00 01 44.05	0.11	0 35 30.3	1.7	0.4
8	00 00 41.21	0.11	0 42 43.1	1.7	0.4	19	00 01 51.23	0.11	0 34 41.4	1.7	0.4
9	00 00 46.74	0.11	0 42 04.6	1.7	0.4	20	00 01 58.55	0.11	0 33 51.4	1.7	0.4
10	00 00 52.45	0.11	0 41 25.1	1.7	0.4	21	00 02 06.04	0.11	S. 0 33 00.5	1.7	0.4
11	00 00 58.32	0.11	S. 0 40 44.4	1.7	0.4						

Aug. 13	00 26 56.81	0.12	N. 2 06 00.6	1.8	0.5	Sept. 10	00 23 45.40	0.12	N. 1 44 52.9	1.8	0.5
14	00 26 51.61	0.12	2 05 25.5	1.8	0.5	11	00 23 37.17	0.12	1 43 59.1	1.8	0.5
15	00 26 46.27	0.12	2 04 49.5	1.8	0.5	12	00 23 28.88	0.12	1 43 04.9	1.8	0.5
16	00 26 40.79	0.12	2 04 12.6	1.8	0.5	13	00 23 20.52	0.12	1 42 10.4	1.8	0.5
17	00 26 35.17	0.12	2 03 34.8	1.8	0.5	14	00 23 12.10	0.12	1 41 15.5	1.8	0.5
18	00 26 29.41	0.12	2 02 56.2	1.8	0.5	15	00 23 03.63	0.12	1 40 20.3	1.8	0.5
19	00 26 23.52	0.12	2 02 16.7	1.8	0.5	16	00 22 55.11	0.12	1 39 24.8	1.8	0.5
20	00 26 17.49	0.12	2 01 36.4	1.8	0.5	17	00 22 46.54	0.12	1 38 29.1	1.8	0.5
21	00 26 11.34	0.12	2 00 55.4	1.8	0.5	18	00 22 37.93	0.12	1 37 33.1	1.8	0.5
22	00 26 05.06	0.12	2 00 13.5	1.8	0.5	19	00 22 29.27	0.12	1 36 36.9	1.8	0.5
23	00 25 58.66	0.12	1 59 30.8	1.8	0.5	20	00 22 20.58	0.12	1 35 40.5	1.8	0.5
24	00 25 52.14	0.12	1 58 47.5	1.8	0.5	21	00 22 11.85	0.12	1 34 44.0	1.8	0.5
25	00 25 45.50	0.12	1 58 03.4	1.8	0.5	22	00 22 03.10	0.12	1 33 47.3	1.8	0.5
26	00 25 38.75	0.12	1 57 18.5	1.8	0.5	23	00 21 54.32	0.12	1 32 50.5	1.8	0.5
27	00 25 31.88	0.12	1 56 33.0	1.8	0.5	24	00 21 45.52	0.12	1 31 53.6	1.8	0.5
28	00 25 24.90	0.12	1 55 46.8	1.8	0.5	25	00 21 36.70	0.12	1 30 56.7	1.8	0.5
29	00 25 17.82	0.12	1 54 59.9	1.8	0.5	26	00 21 27.87	0.12	1 29 59.6	1.8	0.5
30	00 25 10.62	0.12	1 54 12.4	1.8	0.5	26	00 21 19.03	0.12	1 29 02.5	1.8	0.5
31	00 25 03.33	0.12	1 53 24.4	1.8	0.5	27	00 21 10.18	0.12	1 28 05.4	1.8	0.5
Sept. 1	00 24 55.93	0.12	1 52 35.7	1.8	0.5	28	00 21 01.33	0.12	1 27 08.3	1.8	0.5
2	00 24 48.45	0.12	1 51 46.4	1.8	0.5	29	00 20 52.47	0.12	1 26 11.3	1.8	0.5
3	00 24 40.86	0.12	1 50 56.5	1.8	0.5	30	00 20 43.62	0.12	1 25 14.3	1.8	0.5
4	00 24 33.19	0.12	1 50 06.0	1.8	0.5	Oct. 1	00 20 34.78	0.12	1 24 17.5	1.8	0.5
5	00 24 25.42	0.12	1 49 15.1	1.8	0.5	2	00 20 25.94	0.12	1 23 20.7	1.8	0.5
6	00 24 17.58	0.12	1 48 23.6	1.8	0.5	3	00 20 17.12	0.12	1 22 24.1	1.8	0.5
7	00 24 09.65	0.12	1 47 31.6	1.8	0.5	4	00 20 08.31	0.12	1 21 27.6	1.8	0.5
8	00 24 01.64	0.12	1 46 39.1	1.8	0.5	5	00 19 59.53	0.12	1 20 31.3	1.8	0.5
9	00 23 53.56	0.12	N. 1 45 46.2	1.8	0.5	6	00 19 50.77	0.12	N. 1 19 35.2	1.8	0.5

URANUS, 1928.

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. passg. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Oct. 7	00 19 42.05	0.12	N. 1 18 39.4	1.8	0.5	Nov. 20	00 14 39.81	0.12	N. 0 47 09.4	1.8	0.5
8	00 19 33.35	0.12	1 17 43.8	1.8	0.5	21	00 14 35.84	0.12	0 46 46.0	1.8	0.5
9	00 19 24.69	0.12	1 16 48.4	1.8	0.5	22	00 14 32.04	0.12	0 46 23.7	1.8	0.5
10	00 19 16.07	0.12	1 15 53.3	1.8	0.5	23	00 14 28.41	0.12	0 46 02.5	1.8	0.5
11	00 19 07.49	0.12	1 14 58.6	1.8	0.5	24	00 14 24.96	0.12	0 45 42.5	1.8	0.5
12	00 18 58.96	0.12	1 14 04.3	1.8	0.5	25	00 14 21.67	0.12	0 45 23.5	1.8	0.5
13	00 18 50.48	0.12	1 13 10.3	1.8	0.5	26	00 14 18.55	0.12	0 45 05.7	1.8	0.4
14	00 18 42.06	0.12	1 12 16.7	1.8	0.5	27	00 14 15.61	0.12	0 44 49.0	1.8	0.4
15	00 18 33.69	0.12	1 11 23.6	1.8	0.5	28	00 14 12.84	0.12	0 44 33.5	1.8	0.4
16	00 18 25.39	0.12	1 10 30.9	1.8	0.5	29	00 14 10.25	0.12	0 44 19.2	1.7	0.4
17	00 18 17.16	0.12	1 09 38.6	1.8	0.5	30	00 14 07.83	0.12	0 44 06.0	1.7	0.4
18	00 18 09.00	0.12	1 08 46.8	1.8	0.5	Dec. 1	00 14 05.60	0.12	0 43 54.0	1.7	0.4
19	00 18 00.92	0.12	1 07 55.6	1.8	0.5	2	00 14 03.54	0.12	0 43 43.2	1.7	0.4
20	00 17 52.90	0.12	1 07 04.9	1.8	0.5	3	00 14 01.67	0.12	0 43 33.6	1.7	0.4
21	00 17 44.98	0.12	1 06 14.9	1.8	0.5	4	00 13 59.97	0.12	0 43 25.1	1.7	0.4
22	00 17 37.13	0.12	1 05 25.3	1.8	0.5	5	00 13 58.46	0.12	0 43 17.9	1.7	0.4
23	00 17 29.38	0.12	1 04 36.4	1.8	0.5	6	00 13 57.13	0.12	0 43 11.8	1.7	0.4
24	00 17 21.71	0.12	1 03 48.1	1.8	0.5	7	00 13 55.99	0.12	0 43 07.0	1.7	0.4
25	00 17 14.14	0.12	1 03 00.5	1.8	0.5	8	00 13 55.04	0.12	0 43 03.4	1.7	0.4
26	00 17 06.66	0.12	1 02 13.5	1.8	0.5	9	00 13 54.27	0.12	0 43 01.0	1.7	0.4
27	00 16 59.20	0.12	1 01 27.2	1.8	0.5	10	00 13 53.69	0.12	0 42 59.8	1.7	0.4
28	00 16 52.02	0.12	1 00 41.6	1.8	0.5	11	00 13 53.30	0.12	0 42 59.8	1.7	0.4
29	00 16 44.85	0.12	0 59 56.7	1.8	0.5	12	00 13 53.09	0.12	0 43 01.1	1.7	0.4
30	00 16 37.80	0.12	0 59 12.6	1.8	0.5	13	00 13 53.08	0.12	0 43 03.7	1.7	0.4
31	00 16 30.85	0.12	0 58 29.3	1.8	0.5	14	00 13 53.25	0.12	0 43 07.4	1.7	0.4
Nov. 1	00 16 24.02	0.12	0 57 46.7	1.8	0.5	15	00 13 53.61	0.12	0 43 12.4	1.7	0.4
2	00 16 17.31	0.12	0 57 05.0	1.8	0.5	16	00 13 54.17	0.12	0 43 18.7	1.7	0.4
3	00 16 10.71	0.12	0 56 24.0	1.8	0.5	17	00 13 54.91	0.12	0 43 26.1	1.7	0.4
4	00 16 04.28	0.12	0 55 43.9	1.8	0.5	18	00 13 55.85	0.11	0 43 34.8	1.7	0.4
5	00 15 57.91	0.12	0 55 04.6	1.8	0.5	19	00 13 56.98	0.11	0 43 44.8	1.7	0.4
6	00 15 51.60	0.12	0 54 26.2	1.8	0.5	20	00 13 58.29	0.11	0 43 55.9	1.7	0.4
7	00 15 45.61	0.12	0 53 48.6	1.8	0.5	21	00 13 59.79	0.11	0 44 08.3	1.7	0.4
8	00 15 39.67	0.12	0 53 12.0	1.8	0.5	22	00 14 01.48	0.11	0 44 21.9	1.7	0.4
9	00 15 33.86	0.12	0 52 36.3	1.8	0.5	23	00 14 03.36	0.11	0 44 36.8	1.7	0.4
10	00 15 28.14	0.12	0 52 01.5	1.8	0.5	24	00 14 05.42	0.11	0 44 52.9	1.7	0.4
11	00 15 22.66	0.12	0 51 27.8	1.8	0.5	25	00 14 07.68	0.11	0 45 10.1	1.7	0.4
12	00 15 17.20	0.12	0 50 55.0	1.8	0.5	26	00 14 10.12	0.11	0 45 28.6	1.7	0.4
13	00 15 12.06	0.12	0 50 23.2	1.8	0.5	27	00 14 12.75	0.11	0 45 48.3	1.7	0.4
14	00 15 06.98	0.12	0 49 52.4	1.9	0.5	28	00 14 15.56	0.11	0 46 09.2	1.7	0.4
15	00 15 02.06	0.12	0 49 22.6	1.8	0.5	29	00 14 18.56	0.11	0 46 31.3	1.7	0.4
16	00 14 57.29	0.12	0 48 53.8	1.8	0.5	30	00 14 21.74	0.11	0 46 54.5	1.7	0.4
17	00 14 52.68	0.12	0 48 26.1	1.8	0.5	31	00 14 25.11	0.11	0 47 19.0	1.7	0.4
18	00 14 48.23	0.12	0 47 59.5	1.8	0.5	32	00 14 28.66	0.11	N. 0 47 44.6	1.7	0.4
19	00 14 43.93	0.12	N. 0 47 33.9	1.8	0.5						

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AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Apparent Declination.	Hor. Par.	Date.	Apparent Right Ascension.	Apparent Declination.	Hor. Par.
	h m s	° ' "	"		h m s	° ' "	"
Jan. 8	10 04 36.27	N. 12 22 31.0	0.3	Feb. 22	10 00 00.69	N. 12 47 23.6	0.3
9	10 04 31.89	12 22 36.4	0.3	23	10 00 03.28	12 47 58.6	0.3
10	10 04 27.42	12 23 22.2	0.3	24	09 59 56.88	12 48 33.5	0.3
11	10 04 22.86	12 23 48.5	0.3	25	09 59 30.50	12 49 08.3	0.3
12	10 04 18.21	12 24 15.4	0.3	26	09 59 44.15	12 49 43.0	0.3
13	10 04 13.46	12 24 42.7	0.3	27	09 59 37.82	12 50 17.5	0.3
14	10 04 08.62	12 25 10.4	0.3	28	09 59 31.51	12 50 51.9	0.3
15	10 04 03.70	12 25 38.5	0.3	29	09 59 25.24	12 51 26.0	0.3
16	10 03 58.70	12 26 07.1	0.3	Mar. 1	09 59 18.99	12 51 59.9	0.3
17	10 03 53.62	12 26 36.1	0.3	2	09 59 12.77	12 52 33.6	0.3
18	10 03 48.46	12 27 05.5	0.3	3	09 59 06.59	12 53 07.1	0.3
19	10 03 43.22	12 27 35.3	0.3	4	09 59 00.45	12 53 40.4	0.3
20	10 03 37.91	12 28 05.5	0.3	5	09 58 54.34	12 54 13.4	0.3
21	10 03 32.52	12 28 36.1	0.3	6	09 58 48.29	12 54 46.2	0.3
22	10 03 27.06	12 29 07.0	0.3	7	09 58 42.27	12 55 18.7	0.3
23	10 03 21.54	12 29 38.2	0.3	8	09 58 36.30	12 55 50.9	0.3
24	10 03 15.94	12 30 09.8	0.3	9	09 58 30.38	12 56 22.8	0.3
25	10 03 10.28	12 30 41.7	0.3	10	09 58 24.51	12 56 54.5	0.3
26	10 03 04.57	12 31 13.9	0.3	11	09 58 18.70	12 57 25.8	0.3
27	10 02 58.79	12 31 46.4	0.3	12	09 58 12.94	12 57 56.8	0.3
28	10 02 52.96	12 32 19.2	0.3	13	09 58 07.24	12 58 27.4	0.3
29	10 02 47.08	12 32 52.3	0.3	14	09 58 01.59	12 58 57.7	0.3
30	10 02 41.14	12 33 25.6	0.3	15	09 57 56.01	12 59 27.7	0.3
31	10 02 35.16	12 33 59.2	0.3	16	09 57 50.50	12 59 57.2	0.3
Feb. 1	10 02 29.13	12 34 32.9	0.3	17	09 57 45.05	13 00 26.4	0.3
2	10 02 23.05	12 35 06.9	0.3	18	09 57 39.67	13 00 55.1	0.3
3	10 02 16.93	12 35 41.0	0.3	19	09 57 34.36	13 01 23.5	0.3
4	10 02 10.78	12 36 15.3	0.3	20	09 57 29.12	13 01 51.5	0.3
5	10 02 04.58	12 36 49.8	0.3	21	09 57 23.97	13 02 19.0	0.3
6	10 01 58.35	12 37 24.5	0.3	22	09 57 18.89	13 02 46.0	0.3
7	10 01 52.09	12 37 59.3	0.3	23	09 57 13.89	13 03 12.7	0.3
8	10 01 45.81	12 38 34.2	0.3	24	09 57 08.98	13 03 38.9	0.3
9	10 01 39.50	12 39 09.2	0.3	25	09 57 04.15	13 04 04.6	0.3
10	10 01 33.16	12 39 44.4	0.3	26	09 56 59.40	13 04 29.8	0.3
11	10 01 26.80	12 40 19.6	0.3	27	09 56 54.74	13 04 54.5	0.3
12	10 01 20.42	12 40 54.9	0.3	28	09 56 50.17	13 05 18.7	0.3
13	10 01 14.02	12 41 30.2	0.3	29	09 56 45.69	13 05 42.5	0.3
14	10 01 07.60	12 42 05.6	0.3	30	09 56 41.30	13 06 05.7	0.3
15	10 01 01.18	12 42 41.0	0.3	31	09 56 37.00	13 06 28.4	0.3
16	10 00 54.75	12 43 16.4	0.3	Apr. 1	09 56 32.80	13 06 50.6	0.3
17	10 00 48.31	12 43 51.8	0.3	2	09 56 28.70	13 07 12.2	0.3
18	10 00 41.87	12 44 27.2	0.3	3	09 56 24.69	13 07 33.3	0.3
19	10 00 35.43	12 45 02.6	0.3	4	09 56 20.79	13 07 53.9	0.3
20	10 00 28.99	12 45 38.0	0.3	5	09 56 16.98	13 08 13.8	0.3
21	10 00 22.55	12 46 13.2	0.3	6	09 56 13.28	13 08 33.3	0.3
22	10 00 16.11	N. 12 46 48.4	0.3	7	09 56 09.68	N. 13 08 52.2	0.3

NEPTUNE, 1928.

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Apparent Declination.	Hor. Par.	Date.	Apparent Right Ascension.	Apparent Declination.	Hor. Par.
	h m s	° ' "	"		h m s	° ' "	"
Apr. 8	09 56 06.18	N. 13 09 10.5	0.3	May 16	09 55 20.50	N. 13 12 57.4	0.3
9	09 56 02.80	13 09 28.2	0.3	17	09 55 21.72	13 12 50.5	0.3
10	09 55 59.52	13 09 45.4	0.3	18	09 55 23.06	13 12 43.0	0.3
11	09 55 56.35	13 10 01.9	0.3	19	09 55 24.53	13 12 34.7	0.3
12	09 55 53.29	13 10 17.8	0.3	20	09 55 26.13	13 12 25.8	0.3
13	09 55 50.34	13 10 33.1	0.3	21	09 55 27.85	13 12 16.2	0.3
14	09 55 47.50	13 10 47.9	0.3	22	09 55 29.69	13 12 06.0	0.3
15	09 55 44.77	13 11 02.0	0.3	23	09 55 31.66	13 11 55.1	0.3
16	09 55 42.16	13 11 15.5	0.3	24	09 55 33.75	13 11 43.6	0.3
17	09 55 39.66	13 11 28.4	0.3	25	09 55 35.97	13 11 31.4	0.3
18	09 55 37.28	13 11 40.7	0.3	26	09 55 38.31	13 11 18.6	0.3
19	09 55 35.02	13 11 52.3	0.3	27	09 55 40.77	13 11 05.1	0.3
20	09 55 32.88	13 12 03.2	0.3	28	09 55 43.35	13 10 51.0	0.3
21	09 55 30.86	13 12 13.6	0.3	29	09 55 46.06	13 10 36.3	0.3
22	09 55 28.96	13 12 23.3	0.3	30	09 55 48.88	13 10 20.9	0.3
23	09 55 27.18	13 12 32.3	0.3	31	09 55 51.82	13 10 04.9	0.3
24	09 55 25.53	13 12 40.7	0.3	June 1	09 55 54.87	13 09 48.2	0.3
25	09 55 23.99	13 12 48.4	0.3	2	09 55 58.05	13 09 31.0	0.3
26	09 55 22.58	13 12 55.5	0.3	3	09 56 01.34	13 09 13.1	0.3
27	09 55 21.29	13 13 02.0	0.3	4	09 56 04.75	13 08 54.7	0.3
28	09 55 20.12	13 13 07.7	0.3	5	09 56 08.27	13 08 35.6	0.3
29	09 55 19.08	13 13 12.8	0.3	6	09 56 11.91	13 08 15.9	0.3
30	09 55 18.16	13 13 17.2	0.3	7	09 56 15.67	13 07 55.6	0.3
May 1	09 55 17.36	13 13 21.0	0.3	8	09 56 19.53	13 07 34.7	0.3
2	09 55 16.69	13 13 24.1	0.3	9	09 56 23.50	13 07 13.2	0.3
3	09 55 16.15	13 13 26.5	0.3	10	09 56 27.59	13 06 51.1	0.3
4	09 55 15.73	13 13 28.3	0.3	11	09 56 31.79	13 06 28.5	0.3
5	09 55 15.44	13 13 29.4	0.3	12	09 56 36.09	13 06 05.3	0.3
6	09 55 15.27	13 13 29.8	0.3	13	09 56 40.51	13 05 41.5	0.3
7	09 55 15.23	13 13 29.6	0.3	14	09 56 45.03	13 05 17.1	0.3
8	09 55 15.31	13 13 28.7	0.3	15	09 56 49.66	13 04 52.2	0.3
9	09 55 15.51	13 13 27.1	0.3	16	09 56 54.40	13 04 26.7	0.3
10	09 55 15.85	13 13 24.9	0.3	17	09 56 59.24	13 04 00.6	0.3
11	09 55 16.31	13 13 22.0	0.3	18	09 57 04.19	13 03 34.0	0.3
12	09 55 16.89	13 13 18.4	0.3	19	09 57 09.24	13 03 06.9	0.3
13	09 55 17.61	13 13 14.2	0.3	20	09 57 14.39	13 02 39.2	0.3
14	09 55 18.45	13 13 09.3	0.3	21	09 57 19.64	N. 13 02 11.0	0.3
15	09 55 19.41	N. 13 13 03.7	0.3				

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Date.	X, True Eq ^x of Date.		Red. to M. Eq ^x of 1928.0	Y, True Eq ^x of Date.		Red. to M. Eq ^x of 1928.0	Z, True Eq ^x of Date.		Red. to M. Eq ^x of 1928.0
	0h.	12h.		0h.	12h.		0h.	12h.	
Jan. 1	+	+		-	-		-	-	+
2	0.1595101	0.1681321	+ 766	0.8901234	0.8887787	+ 93	0.3860978	0.3855143	+ 119
3	0.1767406	0.1853350	755	0.8873649	0.8858823	104	0.3849009	0.3842576	124
4	0.1939146	0.2024789	744	0.8843310	0.8827111	115	0.3835845	0.3828816	129
5	0.2110271	0.2195586	732	0.8810229	0.8792665	125	0.3821490	0.3813869	134
6	0.2280728	0.2365692	721	0.8774420	0.8755496	135	0.3805952	0.3797741	139
7	0.2450471	0.2535059	+ 709	0.8735895	0.8715618	+ 144	0.3789236	0.3780437	+ 143
8	0.2619450	0.2703638	697	0.8694666	0.8673042	153	0.3771347	0.3761965	148
9	0.2787617	0.2871381	685	0.8650746	0.8627781	162	0.3752292	0.3742329	152
10	0.2954924	0.3038240	673	0.8604148	0.8579848	171	0.3732075	0.3721533	157
11	0.3121322	0.3204165	661	0.8554882	0.8529253	179	0.3710703	0.3699586	161
12	0.3286762	0.3369107	+ 649	0.8502963	0.8476013	+ 187	0.3688182	0.3676492	+ 165
13	0.3451193	0.3533015	637	0.8448403	0.8420137	194	0.3664517	0.3652257	168
14	0.3614566	0.3695840	625	0.8391217	0.8361643	201	0.3639713	0.3626887	172
15	0.3776830	0.3857530	612	0.8331419	0.8300546	208	0.3613779	0.3600390	175
16	0.3937933	0.4018034	600	0.8269027	0.8236863	215	0.3586720	0.3572772	179
17	0.4097826	0.4177302	+ 588	0.8204057	0.8170610	+ 222	0.3558545	0.3544040	+ 182
18	0.4256456	0.4335281	575	0.8136526	0.8101808	228	0.3529260	0.3514205	185
19	0.4413772	0.4491922	563	0.8066458	0.8030478	234	0.3498875	0.3483272	188
20	0.4569724	0.4647173	551	0.7993870	0.7956639	239	0.3467397	0.3451252	191
21	0.4724261	0.4800983	538	0.7918786	0.7880315	244	0.3434837	0.3418154	193
22	0.4877333	0.4953303	+ 526	0.7841227	0.7801528	+ 249	0.3401203	0.3383987	+ 196
23	0.5028887	0.5104080	514	0.7761219	0.7720305	254	0.3366507	0.3348763	198
24	0.5178875	0.5253265	502	0.7678788	0.7636672	258	0.3330758	0.3312493	200
25	0.5327245	0.5400809	490	0.7593961	0.7550659	263	0.3293970	0.3275189	202
26	0.5473951	0.5546664	478	0.7506769	0.7462295	267	0.3256153	0.3236864	204
27	0.5618943	0.5690782	+ 466	0.7417241	0.7371612	+ 270	0.3217323	0.3197531	+ 206
28	0.5762176	0.5833119	454	0.7325410	0.7278641	274	0.3177491	0.3157205	207
29	0.5903606	0.5973632	442	0.7231309	0.7183418	277	0.3136673	0.3115899	208
30	0.6043190	0.6112276	430	0.7134972	0.7085975	280	0.3094883	0.3073628	210
31	0.6180886	0.6249014	418	0.7036432	0.6986347	283	0.3052137	0.3030410	211
Feb. 1	0.6316655	0.6383806	+ 407	0.6935725	0.6884570	+ 285	0.3008450	0.2986258	+ 212
2	0.6450460	0.6516613	395	0.6832885	0.6780676	288	0.2963836	0.2941187	212
3	0.6582262	0.6647401	384	0.6727946	0.6674700	290	0.2918312	0.2895214	213
4	0.6712027	0.6776134	373	0.6620942	0.6566676	292	0.2871893	0.2848352	214
5	0.6839718	0.6902776	361	0.6511907	0.6456638	294	0.2824593	0.2800618	214
6	0.6965303	0.7027294	+ 350	0.6400874	0.6344619	+ 295	0.2776428	0.2752025	+ 214
7	0.7088746	0.7149653	339	0.6287877	0.6230652	297	0.2727411	0.2702588	214
8	0.7210012	0.7269819	328	0.6172948	0.6114770	298	0.2677558	0.2652322	214
9	0.7329069	0.7387758	318	0.6056121	0.5997007	299	0.2626883	0.2601242	214
10	0.7445881	0.7503434	307	0.5937431	0.5877397	300	0.2575401	0.2549362	213
11	0.7560413	0.7616814	+ 297	0.5816911	0.5755976	+ 300	0.2523127	0.2496698	+ 213
12	0.7672632	0.7727863	286	0.5694597	0.5632778	301	0.2470076	0.2443264	212
13	0.7782502	0.7836545	276	0.5570524	0.5507839	301	0.2416264	0.2389077	211
14	0.7889989	0.7942830	266	0.5444729	0.5381198	302	0.2361705	0.2334152	210
15	0.7995062	0.8046682	256	0.5317251	0.5252893	302	0.2306418	0.2278505	209
16	0.8097685	0.8148068	+ 246	0.5188128	0.5122962	+ 302	0.2250416	0.2222153	+ 208

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	0h.	12h.		0h.	12h.		0h.	12h.	
Feb. 16	+	+		-	-		-	-	
17	0.8197827	0.8246958	+ 237	0.5057399	0.4991444	+ 301	0.2193718	0.2165113	+ 207
18	0.8295456	0.8343317	227	0.4925103	0.4858381	301	0.2136340	0.2107402	205
19	0.8390539	0.8437117	218	0.4791282	0.4723813	301	0.2078301	0.2049039	204
20	0.8483046	0.8528324	209	0.4655978	0.4587784	300	0.2019618	0.1990040	202
21	0.8572947	0.8616910	200	0.4519235	0.4450338	300	0.1960308	0.1930425	200
22	0.8660210	0.8702845	+ 191	0.4381098	0.4311520	+ 299	0.1900393	0.1870214	+ 198
23	0.8744810	0.8786103	182	0.4241611	0.4171377	298	0.1839891	0.1809427	196
24	0.8826720	0.8866658	173	0.4100823	0.4029956	297	0.1778823	0.1748083	194
25	0.8905915	0.8944487	165	0.3958781	0.3887306	296	0.1717210	0.1686205	192
26	0.8982373	0.9019569	156	0.3815535	0.3743475	294	0.1655072	0.1623813	189
27	0.9056073	0.9091884	+ 148	0.3671131	0.3598511	+ 293	0.1592431	0.1560928	+ 187
28	0.9126999	0.9161416	140	0.3525619	0.3452461	292	0.1529307	0.1497571	184
29	0.9195133	0.9228148	132	0.3379044	0.3305374	290	0.1465722	0.1433764	182
Mar. 1	0.9260460	0.9292067	124	0.3231456	0.3157296	289	0.1401697	0.1369526	179
2	0.9322966	0.9353158	117	0.3082900	0.3008273	287	0.1337253	0.1304880	176
3	0.9382639	0.9411408	+ 109	0.2933422	0.2858352	+ 285	0.1272409	0.1239844	+ 173
4	0.9439465	0.9466808	102	0.2783067	0.2707575	283	0.1207185	0.1174437	170
5	0.9493435	0.9519344	95	0.2631880	0.2555988	281	0.1141602	0.1108682	166
6	0.9544535	0.9569006	88	0.2479905	0.2403635	279	0.1075678	0.1042595	163
7	0.9592756	0.9615783	81	0.2327185	0.2250560	277	0.1009433	0.0976196	160
8	0.9638086	0.9659663	+ 74	0.2173766	0.2096807	+ 275	0.0942886	0.0909505	+ 156
9	0.9680513	0.9700635	68	0.2019689	0.1942418	273	0.0876055	0.0842539	153
10	0.9720028	0.9738690	61	0.1865000	0.1787439	270	0.0808959	0.0775319	149
11	0.9756620	0.9773817	55	0.1709743	0.1631915	268	0.0741619	0.0707863	145
12	0.9790279	0.9806006	49	0.1553963	0.1475892	265	0.0674053	0.0640191	141
13	0.9820996	0.9835248	+ 43	0.1397706	0.1319412	+ 263	0.0606280	0.0572322	+ 138
14	0.9848761	0.9861534	38	0.1241016	0.1162523	260	0.0538319	0.0504275	134
15	0.9873566	0.9884856	32	0.1083940	0.1005272	257	0.0470192	0.0436072	130
16	0.9895403	0.9905207	26	0.0926525	0.0847705	255	0.0401918	0.0367732	126
17	0.9914267	0.9922581	21	0.0768817	0.0689868	252	0.0333516	0.0299274	121
18	0.9930148	0.9936969	+ 16	0.0610864	0.0531811	+ 249	0.0265007	0.0230719	+ 117
19	0.9943042	0.9948367	11	0.0452714	0.0373581	246	0.0196412	0.0162088	113
20	0.9952944	0.9956772	6	0.0294417	0.0215228	243	0.0127751	0.0093403	109
21	0.9959850	0.9962178	+ 2	0.0136021	0.0056803	240	0.0059046	0.0024684	104
22	0.9963757	0.9964587	- 3	0.0022421	0.0101644	236	0.0009681	0.0044046	100
23	0.9964667	0.9963998	- 7	0.0180860	0.0260061	+ 233	0.0078408	0.0112764	+ 95
24	0.9962580	0.9960413	11	0.0339243	0.0418397	230	0.0147111	0.0181448	91
25	0.9957499	0.9953838	15	0.0497518	0.0576599	226	0.0215770	0.0250076	87
26	0.9949432	0.9941281	19	0.0655635	0.0734619	223	0.0284362	0.0318626	82
27	0.9938386	0.9931749	23	0.0813544	0.0892406	219	0.0352864	0.0387075	77
28	0.9924371	0.9916254	- 26	0.0971197	0.1049912	+ 216	0.0421256	0.0455403	+ 73
29	0.9907398	0.9897806	29	0.1128545	0.1207090	212	0.0489515	0.0523588	68
30	0.9887479	0.9876418	33	0.1285541	0.1363893	208	0.0557621	0.0591610	64
31	0.9864626	0.9852103	35	0.1442141	0.1520278	204	0.0625554	0.0659449	59
Apr. 1	0.9838852	0.9824874	38	0.1598299	0.1676199	200	0.0693294	0.0727086	54
Apr. 1	0.9810170	0.9794743	- 41	0.1753972	0.1831614	+ 196	0.0760823	0.0794502	+ 50
	+	+		+	+		+	+	

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Date.	N, True Eq ^x of Date.		Red. to M. Eq ^x of 1928.0	Y, True Eq ^x of Date.		Red. to M. Eq ^x of 1928.0	Z, True Eq ^x of Date.		Red. to M. Eq ^x of 1928.0
	0h.	12h.		0h.	12h.		0h.	12h.	
Apr. 2	+	+		+	+		+	+	
	0.9778593	0.9761723	- 43	0.1909118	0.1986480	+ 192	0.0828121	0.0861678	+ 45
	3	0.9744135	45	2.063693	2.140753	188	0.0895170	0.0928596	40
	4	0.9706809	47	2.217655	2.294393	184	0.0961953	0.0995238	36
	5	0.9666628	49	2.370963	2.447358	180	0.1028449	0.1061584	31
	6	0.9623606	51	2.523573	2.599604	176	0.1094642	0.1127619	26
7	0.9577758	0.9553778	- 52	0.2675445	0.2751091	+ 172	0.1160514	0.1193324	+ 21
	8	0.9529097	53	2.826537	2.901777	167	0.1226046	0.1258679	17
	9	0.9477639	54	2.976806	3.051619	163	0.1291221	0.1323669	12
	10	0.9423398	55	3.126211	3.200576	158	0.1356020	0.1388274	7
	11	0.9366390	56	3.274709	3.348605	154	0.1420427	0.1452478	+ 3
	12	0.9306632	- 56	0.3422259	0.3495665	+ 150	0.1484423	0.1516261	- 2
13	0.9244140	0.9211874	56	3.568818	3.641713	145	0.1547989	0.1579606	6
	14	0.9178931	56	3.714344	3.786706	140	0.1611109	0.1642495	11
	15	0.9111023	56	3.858793	3.930601	136	0.1673762	0.1704909	16
	16	0.9040435	55	4.002123	4.073354	131	0.1735932	0.1766829	20
	17	0.8967188	- 55	0.4144289	0.4214923	+ 127	0.1797598	0.1828237	- 25
	18	0.8891301	54	4.285249	4.355262	122	0.1858743	0.1889114	29
19	0.8812800	0.8772577	53	4.424957	4.494328	118	0.1919346	0.1949439	33
	20	0.8731709	51	4.563370	4.632077	113	0.1979389	0.2009194	38
	21	0.8648054	50	4.700443	4.768465	108	0.2038852	0.2068361	42
	22	0.8561867	- 48	0.4836136	0.4903451	+ 104	0.2097718	0.2126921	- 46
	23	0.8473175	46	4.970406	5.036996	99	0.2155967	0.2184854	50
	24	0.8382013	44	5.103215	5.169059	94	0.2213581	0.2242145	55
25	0.8288414	0.8240711	41	5.234523	5.299604	90	0.2270545	0.2298778	59
	26	0.8192411	39	5.364296	5.428596	85	0.2326842	0.2354735	63
	27	0.8094037	- 36	0.5492499	0.5556000	+ 81	0.2382456	0.2410003	- 67
	28	0.7993325	33	5.619097	5.681784	76	0.2437373	0.2464566	71
	29	0.7890309	29	5.744057	5.805914	72	0.2491578	0.2518409	74
	30	0.7785023	26	5.867349	5.928359	67	0.2545057	0.2571521	78
May 1	0.7677499	0.7622908	22	5.988940	6.049088	63	0.2597798	0.2623887	82
2	0.7567770	0.7512089	- 18	0.6108800	0.6168071	+ 59	0.2649786	0.2675494	- 86
	3	0.7455870	14	6.226898	6.285277	55	0.2701008	0.2726328	89
	4	0.7341831	9	6.343203	6.400675	50	0.2751451	0.2776377	92
	5	0.7225686	- 4	6.457687	6.514236	46	0.2801104	0.2825630	96
	6	0.7107467	+ 1	6.570319	6.625931	42	0.2849953	0.2874072	99
	7	0.6987209	+ 6	0.6681069	0.6735730	+ 39	0.2897985	0.2921692	- 102
8	0.6864945	0.6803071	11	6.789908	6.843602	35	0.2945189	0.2968476	106
	9	0.6740708	17	6.896808	6.949521	31	0.2991551	0.3014413	109
	10	0.6614533	22	7.001739	7.053457	28	0.3037060	0.3059491	112
	11	0.6486454	28	7.104672	7.155380	24	0.3081703	0.3103696	114
	12	0.6356505	+ 35	0.7205578	0.7255261	+ 21	0.3125468	0.3147018	- 117
	13	0.6224723	41	7.304427	7.353072	18	0.3168343	0.3189442	120
14	0.6091142	0.6023689	48	7.401191	7.448782	15	0.3210315	0.3230958	122
	15	0.5955800	54	7.495840	7.542363	12	0.3251371	0.3271551	125
	16	0.5818735	61	7.588345	7.633784	9	0.3291498	0.3311210	127
	17	0.5679987	+ 68	0.7678676	0.7723018	+ 6	0.3330685	0.3349922	- 129
	+	+		+	+		+	+	

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Date.	X, True Eq ^x of Date.		Red. to M. Eq ^x of 1928 ^o	Y, True Eq ^x of Date.		Red. to M. Eq ^x of 1928 ^o	Z, True Eq ^x of Date.		Red. to M. Eq ^x of 1928 ^o
	0h.	12h.		0h.	12h.		0h.	12h.	
May 18	0°5539598	0°5468801	+ 76	0°7766806	0°7810037	+ 4	0°3368918	0°3387673	— 131
19	°5397610	°5326031	83	°7852707	°7894812	+ 2	°3406185	°3424453	133
20	°5254069	°5181731	91	°7936351	°7977319	— 0	°3442475	°3460249	135
21	°5109022	°5035947	99	°8017714	°8057533	2	°3477774	°3495049	137
22	°4962513	°4888726	107	°8096773	°8135432	4	°3512074	°3528846	139
23	C 4814591	0°4740115	+ 115	0°8173508	0°8210998	— 6	0°3545365	0°3561629	— 140
24	°4665303	°4590161	123	°8247899	°8284210	7	°3577638	°3593391	142
25	°4514695	°4438911	132	°8319928	°8355052	8	°3608886	°3624123	143
26	°4362815	°4286412	140	°8389580	°8423509	9	°3639101	°3653819	144
27	°4209708	°4132708	149	°8456837	°8489564	9	°3668276	°3682471	145
28	0°4055419	0°3977845	+ 158	0°8521686	0°8553203	— 10	0°3696403	0°3710073	— 146
29	°3899992	°3821866	167	°8584112	°8614413	10	°3723479	°3736621	147
30	°3743472	°3664816	176	°8644103	°8673180	10	°3749497	°3762107	148
31	°3585903	°3506739	185	°8701643	°8729491	10	°3774451	°3786527	149
June 1	°3427329	°3347678	194	°8756721	°8783333	9	°3798336	°3809877	149
2	0°3267793	0°3187679	+ 204	0°8809324	0°8834694	— 9	0°3821147	0°3832148	— 150
3	°3107339	°3026781	213	°8859440	°8883562	8	°3842879	°3853339	150
4	°2946010	°2865031	222	°8907058	°8929926	6	°3863527	°3873442	150
5	°2783850	°2702471	232	°8952165	°8973773	5	°3883085	°3892455	150
6	°2620901	°2539144	241	°8994750	°9015093	3	°3901551	°3910372	150
7	°2457206	°2375093	+ 251	0°9031802	0°9053874	— 1	0°3918918	0°3927189	— 149
8	°2292810	°2210362	261	°9072309	°9090104	+ 1	°3935183	°3942901	149
9	°2127755	°2044995	270	°9107260	°9123774	4	°3950341	°3957504	148
10	°1962087	°1879036	280	°9139645	°9154872	7	°3964388	°3970994	148
11	°1795848	°1712530	290	°9169453	°9183387	10	°3977319	°3983364	147
12	0°1629086	0°1545523	+ 299	0°9196673	0°9209309	+ 13	0°3989128	0°3999461	— 146
13	°1461846	°1378061	309	°9221294	°9232626	17	°3999812	°4004731	145
14	°1294175	°1210194	318	°9243305	°9253329	21	°4009366	°4013718	144
15	°1126124	°1041971	328	°9262698	°9271410	25	°4017785	°4021568	142
16	°0957742	°0873443	337	°9279465	°9286861	29	°4025065	°4028277	141
17	0°0789080	0°0704660	+ 347	0°9293599	0°9299677	+ 34	0°4031204	0°4033845	— 139
18	°0620190	°0535676	356	°9305095	°9309853	39	°4036199	°4038266	138
19	°0451124	°0366542	365	°9313950	°9317387	45	°4040047	°4041541	136
20	°0281935	°0197310	375	°9320163	°9322278	50	°4042748	°4043669	134
21	°0112675	°0028034	384	°9323734	°9324529	56	°4044302	°4044649	132
22	0°0056606	0°0141238	+ 393	0°9324665	0°9324143	+ 62	0°4044710	0°4044485	— 130
23	°0225856	°0310455	401	°9322961	°9321121	69	°4043973	°4043176	127
24	°0395028	°0474569	410	°9318624	°9315471	75	°4042093	°4040724	125
25	°0564072	°0648532	419	°9311661	°9307196	82	°4039071	°4037133	122
26	°0732942	°0817297	428	°9302076	°9296303	89	°4034911	°4032405	119
27	0°0901591	0°0985818	+ 436	0°9289876	0°9282797	+ 97	0°4029615	0°4026542	— 116
28	°1069973	°1154050	444	°9275066	°9266684	104	°4023186	°4019548	113
29	°1238043	°1322194	452	°9257652	°9247971	112	°4015627	°4011425	110
30	°1405754	°1489462	460	°9237642	°9226665	121	°4006942	°4002178	107
July 1	°1573064	°1656553	467	°9215042	°9202774	129	°3997134	°3991809	104
2	0°1739926	0°1823176	+ 475	0°9189861	0°9176305	+ 138	0°3986205	0°3980322	— 100

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Date.	X, True Eq ^z of Date.		Red. to M. Eq ^z of 1928°0	Y, True Eq ^z of Date.		Red. to M. Eq ^z of 1928°0	Z, True Eq ^z of Date.		Red. to M. Eq ^z of 1928°0
	oh.	12h.		oh.	12h.		oh.	12h.	
July 3	0°1906298	0°1989286	+ 482	0°9162106	0°9147266	+ 147	0°3974160	0°3967721	— 96
4	2072135	2154840	489	9131785	9115664	156	3961003	3954009	93
5	2237395	2319795	496	9098905	9081508	165	3946738	3939190	89
6	2402034	2484106	502	9063474	9044805	175	3931367	3923269	85
7	2566007	2647731	509	9025501	9005564	185	3914896	3906248	81
8	2719273	2810627	+ 515	8984994	8963792	+ 105	3897326	3888131	— 76
9	2891786	2972747	520	8941960	8919498	205	3878662	3868921	72
10	3053502	3134047	526	8896408	8872697	215	3858908	3848623	68
11	3214375	3294480	531	8848347	8823379	226	3838067	3827240	63
12	3374357	3454001	536	8797787	8771572	236	3816143	3804776	58
13	3533304	3612561	+ 541	8744738	8717284	+ 247	3793140	3781236	— 54
14	3691466	3770112	545	8689212	8660525	258	3769064	3756624	49
15	3848495	3926607	549	8631223	8601309	270	3743919	3730948	44
16	4004442	4081994	553	8570786	8539654	281	3717712	3704212	39
17	4159258	4236226	556	8507917	8475577	293	3690449	3676424	34
18	4312894	4389256	+ 559	8442636	8409097	+ 304	3662138	3647593	— 28
19	4465305	4541037	562	8374962	8340234	316	3632789	3617727	23
20	4618444	4691522	565	8304916	8269011	328	3602408	3586835	17
21	4766265	4840669	567	8232522	8195452	340	3571008	3554928	12
22	4914726	4988433	568	8157804	8119580	352	3538597	3522017	— 6
23	5061785	5134775	+ 570	8080783	8041418	+ 364	3505187	3488111	0
24	5207369	5279652	571	8001486	7960991	376	3470788	3453221	+ 5
25	5351529	5423026	572	7919936	7878324	389	3435410	3417358	11
26	5494137	5564857	572	7836157	7793440	401	3399065	3380534	17
27	5635182	5705107	572	7750175	7706365	413	3361765	3342759	24
28	5774627	5843738	+ 572	7666204	7617125	+ 426	3323518	3304044	+ 30
29	5912435	5980714	571	7571701	7525744	438	3284338	3264401	36
30	6048570	6115998	570	7479259	7432249	451	3244235	3223841	42
31	6182994	6249555	569	7384716	7336664	463	3203221	3182376	49
Aug. 1	6315674	6381349	567	7288096	7239015	476	3161307	3140016	55
2	6446575	6511346	+ 565	7189424	7139327	+ 488	3118505	3096774	+ 62
3	6575660	6639511	562	7088727	7037627	501	3074825	3052660	68
4	6702896	6765810	559	6986029	6933938	513	3030279	3007685	75
5	6828248	6890206	556	6881356	6828286	526	2984878	2961860	81
6	6951681	7012666	552	6774732	6720697	538	2938632	2915197	88
7	7073159	7133153	+ 548	6666183	6611196	+ 551	2891554	2867705	+ 95
8	7192645	7251630	544	6555737	6499810	563	2843653	2819397	102
9	7310103	7368060	539	6443419	6386568	575	2794941	2770285	109
10	7425496	7482406	534	6329259	6271497	587	2745430	2720379	116
11	7538786	7594631	529	6213285	6154628	599	2695133	2669694	123
12	7649937	7704698	+ 523	6095529	6035993	+ 611	2644062	2618241	+ 130
13	7758910	7812570	517	5976023	5915624	623	2592232	2566036	137
14	7865671	7918210	510	5854801	5793558	635	2539656	2513093	144
15	7970182	8021584	503	5731899	5669829	647	2486349	2459427	151
16	8072412	8122660	496	5607353	5544475	658	2432328	2405054	158
17	8172325	8221404	+ 488	5481200	5417534	+ 670	2377608	2349992	+ 165
	—	—		+	+		+	+	

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Date.	X, True Eq ^x of Date.		Red. to M. Eq ^x of 1928 ^o	Y, True Eq ^x of Date.		Red. to M. Eq ^x of 1928 ^o	Z, True Eq ^x of Date.		Red. to M. Eq ^x of 1928 ^o
	0h.	12h.		0h.	12h.		0h.	12h.	
Aug. 18	—	—	+	+	+	+	+	+	+
19	0.8266892	0.8317785	480	0.5353481	0.5289045	681	0.2322208	0.2294257	172
20	0.8365082	0.8411777	472	0.5224232	0.5159017	692	0.2266142	0.2237865	179
21	0.8457867	0.8503349	463	0.5093494	0.5027579	703	0.2209429	0.2180835	187
22	0.8548221	0.8594278	454	0.4961306	0.4894681	714	0.2152086	0.2123183	194
	0.8636118	0.8679138	445	0.4827708	0.4760392	724	0.2094130	0.2064927	201
23	0.8721534	0.8763304	435	0.4692738	0.4624751	735	0.2035578	0.2006085	208
24	0.8804445	0.8844954	425	0.4556435	0.4487797	745	0.1976449	0.1946673	215
25	0.8884828	0.8924064	415	0.4418840	0.4349570	755	0.1916759	0.1886709	222
26	0.8962661	0.9000615	404	0.4279992	0.4210110	765	0.1856525	0.1826210	230
27	0.9037923	0.9074584	393	0.4139929	0.4069454	774	0.1795766	0.1765194	237
28	0.9110595	0.9145953	382	0.3998690	0.3927643	784	0.1734497	0.1703677	244
29	0.9180656	0.9214702	370	0.3856317	0.3784716	793	0.1672736	0.1641677	251
30	0.9248088	0.9280813	358	0.3712846	0.3640711	802	0.1610501	0.1579211	258
31	0.9312874	0.9344268	346	0.3568315	0.3495665	811	0.1547808	0.1516295	265
Sept. 1	0.9374994	0.9405049	334	0.3422763	0.3349616	819	0.1484674	0.1452947	272
2	0.9434431	0.9463137	321	0.3276227	0.3202602	828	0.1421115	0.1389181	279
3	0.9491165	0.9518512	308	0.3128745	0.3054661	836	0.1357147	0.1325014	286
4	0.9545177	0.9571157	295	0.2980355	0.2905832	844	0.1292785	0.1260462	293
5	0.9596450	0.9621052	281	0.2831096	0.2756152	851	0.1228048	0.1195543	300
6	0.9644962	0.9668177	267	0.2681006	0.2605663	859	0.1162951	0.1130273	307
7	0.9690695	0.9712512	253	0.2530128	0.2454405	866	0.1097511	0.1064669	314
8	0.9733628	0.9754039	239	0.2378502	0.2302422	873	0.1031748	0.0998750	320
9	0.9773743	0.9792739	224	0.2226172	0.2149756	879	0.0965678	0.0932534	327
10	0.9811023	0.9828595	209	0.2073181	0.1996452	886	0.0899326	0.0866040	333
11	0.9845451	0.9861590	194	0.1919576	0.1842557	892	0.0832695	0.0799288	340
12	0.9877010	0.9891710	179	0.1765402	0.1688116	898	0.0765821	0.0732297	346
13	0.9905687	0.9918942	163	0.1610706	0.1533178	903	0.0698719	0.0665090	353
14	0.9931471	0.9943273	147	0.1455538	0.1377791	908	0.0631411	0.0597686	359
15	0.9954348	0.9964695	131	0.1299944	0.1222002	913	0.0563917	0.0530106	365
16	0.9974313	0.9983200	115	0.1143972	0.1065860	918	0.0496257	0.0462372	372
17	0.9991356	0.9998780	99	0.0987672	0.0909414	923	0.0428454	0.0394505	378
18	1.0005473	1.0011432	82	0.0831091	0.0752710	927	0.0360528	0.0326525	384
19	0.0016658	0.0021150	65	0.0674276	0.0595796	931	0.0292500	0.0258454	390
20	0.0024008	0.0027932	48	0.0517275	0.0438720	934	0.0224391	0.0190312	395
21	0.0030222	0.0031777	31	0.0360135	0.0281528	938	0.0156222	0.0122121	401
22	0.0032597	0.0032683	14	0.0202903	0.0124266	941	0.0088013	0.0053900	407
23	0.0032034	0.0030650	4	0.0045624	0.0033018	943	0.0019785	0.0014330	412
24	0.0028533	0.0025681	21	0.0111654	0.0190278	946	0.0048443	0.0082550	417
25	0.0022096	0.0017777	39	0.0268886	0.0347472	948	0.0116649	0.0150739	423
26	0.0012725	0.0006941	57	0.0426029	0.0504553	950	0.0184815	0.0218877	428
27	0.0000424	0.9999176	75	0.0583037	0.0661476	952	0.0252921	0.0286946	433
28	0.9985197	0.9976487	94	0.0739866	0.0818200	953	0.0320948	0.0354926	437
29	0.9967047	0.9956877	112	0.0896474	0.0974681	954	0.0388877	0.0422800	442
30	0.9945979	0.9934352	131	0.1052817	0.1130876	955	0.0456691	0.0490548	447
Oct. 1	0.9921996	0.9908912	150	0.1208854	0.1286744	955	0.0524370	0.0558154	452
2	0.9895101	0.9880562	168	0.1364542	0.1442243	956	0.0591897	0.0625598	456

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Date.	X, True Eq ^x of Date.		Red. to M. Eq ^x of 1928 ^o	Y, True Eq ^x of Date.		Red. to M. Eq ^x of 1928 ^o	Z, True Eq ^x of Date.		Red. to M. Eq ^x of 1928 ^o
	0h.	12h.		0h.	12h.		0h.	12h.	
III. 3	0.9865296	0.9849303	— 187	0.1519840	0.1597328	+ 956	0.0659253	0.0692861	+ 460
4	0.9832585	0.9815141	206	0.1674701	0.1751955	955	0.0726120	0.0759927	464
5	0.9796971	0.9778076	226	0.1829083	0.1906080	955	0.0793379	0.0826775	468
6	0.9758457	0.9738114	245	0.1982940	0.2059656	954	0.0860112	0.0893386	472
7	0.9717048	0.9695260	264	0.2136224	0.2212636	952	0.0926596	0.0959740	476
8	0.9672750	0.9649520	— 284	0.2288888	0.2364974	+ 951	0.0992814	0.1025817	+ 479
9	0.9625571	0.9600904	304	0.2440886	0.2516619	949	0.1058744	0.1091594	482
10	0.9575519	0.9549419	323	0.2592167	0.2667525	947	0.1124364	0.1157052	486
11	0.9522605	0.9495079	343	0.2742685	0.2817641	945	0.1189655	0.1222170	489
12	0.9466842	0.9437896	363	0.2892388	0.2966919	942	0.1254594	0.1286926	491
13	0.9408242	0.9377884	— 383	0.3041229	0.3115311	+ 939	0.1319161	0.1351299	+ 494
14	0.9346822	0.9315060	403	0.3189160	0.3262770	936	0.1383335	0.1415267	497
15	0.9282599	0.9249443	423	0.3336134	0.3409247	932	0.1447094	0.1478811	499
16	0.9215592	0.9181050	444	0.3482103	0.3554697	928	0.1510417	0.1541909	501
17	0.9145820	0.9109904	464	0.3627022	0.3699073	924	0.1573284	0.1604541	503
18	0.9073305	0.9036026	— 484	0.3770843	0.3842328	+ 920	0.1635676	0.1666687	+ 505
19	0.8998069	0.8959438	505	0.3913522	0.3984420	915	0.1697572	0.1728329	506
20	0.8920135	0.8880164	525	0.4055016	0.4125305	910	0.1758954	0.1789446	508
21	0.8839527	0.8798228	546	0.4195281	0.4264939	905	0.1819802	0.1850020	509
22	0.8756270	0.8713656	566	0.4334273	0.4403279	899	0.1880096	0.1910030	510
23	0.8670390	0.8626474	— 587	0.4471951	0.4540285	+ 893	0.1939819	0.1969461	+ 511
24	0.8581912	0.8536709	607	0.4608275	0.4675916	887	0.1999593	0.2028293	512
25	0.8490866	0.8444389	628	0.4743203	0.4810132	880	0.2057479	0.2086510	512
26	0.8397279	0.8349540	649	0.4876698	0.4942896	873	0.2115383	0.2144096	512
27	0.8301177	0.8252192	669	0.5008721	0.5074170	866	0.2172647	0.2201034	512
28	0.8202588	0.8152370	— 690	0.5139236	0.5203916	+ 859	0.2229254	0.2257307	+ 512
29	0.8101540	0.8050101	711	0.5268205	0.5332099	851	0.2285191	0.2312903	512
30	0.7998057	0.7945412	731	0.5395593	0.5458682	843	0.2340441	0.2367804	511
31	0.7892168	0.7838329	752	0.5521362	0.5583628	834	0.2394989	0.2421994	511
IV. 1	0.7783898	0.7728878	773	0.5645475	0.5706899	826	0.2448818	0.2475458	510
2	0.7673273	0.7617086	— 794	0.5767895	0.5828458	+ 817	0.2501912	0.2528179	+ 508
3	0.7560320	0.7502980	814	0.5888583	0.5948265	807	0.2554257	0.2580143	507
4	0.7445068	0.7386589	835	0.6007499	0.6066280	797	0.2605834	0.2631330	506
5	0.7327546	0.7267944	856	0.6124604	0.6182465	787	0.2656628	0.2681725	504
6	0.7207786	0.7147077	876	0.6239858	0.6296779	777	0.2706620	0.2731310	502
7	0.7085820	0.7024020	— 897	0.6353223	0.6409184	+ 766	0.2755794	0.2780069	+ 499
8	0.6961682	0.6898810	917	0.6464658	0.6519640	755	0.2804133	0.2827984	497
9	0.6835409	0.6771483	938	0.6574125	0.6628109	744	0.2851620	0.2875038	494
10	0.6707037	0.6642077	958	0.6681587	0.6734555	732	0.2898238	0.2921216	491
11	0.6576607	0.6510632	979	0.6787007	0.6838939	720	0.2943970	0.2966500	488
12	0.6444157	0.6377188	— 999	0.6890347	0.6941226	+ 707	0.2988802	0.3010875	+ 485
13	0.6309730	0.6241787	1019	0.6991573	0.7041384	694	0.3032717	0.3054327	482
14	0.6173366	0.6104472	1039	0.7090653	0.7139377	681	0.3075702	0.3096840	478
15	0.6035110	0.5965286	1059	0.7187552	0.7235174	668	0.3117739	0.3138399	474
16	0.5895005	0.5824273	1079	0.7282239	0.7328743	654	0.3158817	0.3178992	470
17	0.5753096	0.5681479	— 1099	0.7374683	0.7420055	+ 640	0.3198922	0.3218605	+ 465

SUN'S CO-ORDINATES, 1928.

Date.	X , True Eq ^x of Date.		Red. to M. Eq ^x of 1928.0	Y , True Eq ^x of Date.		Red. to M. Eq ^x of 1928.0	Z , True Eq ^x of Date.		Red. to M. Eq ^x of 1928.0
	0h.	12h.	12h.	0h.	12h.	12h.	0h.	12h.	12h.
Nov. 18	0.560428	0.5536949	-1119	0.7464856	0.7509081	+ 625	0.3238040	0.3257225	+ 461
19	.5464047	.5390729	1138	.7552727	.7595792	610	.3276158	.3294839	456
20	.5316999	.5242865	1158	.7638272	.7680163	595	.3313266	.3331437	451
21	.5168332	.5093405	1177	.7721463	.7762169	579	.3349352	.3367008	446
22	.5018091	.4942396	1196	.7802277	.7841785	563	.3384404	.3401540	440
23	0.4866325	0.4789885	-1215	0.7880690	0.7918989	+ 546	0.3418413	0.3435024	+ 435
24	.4713080	.4635917	1234	.7956680	.7993760	530	.3451371	.3467452	429
25	.4558401	.4480539	1252	.8030227	.8066078	512	.3483266	.3498813	423
26	.4402335	.4323796	1271	.8101310	.8135921	495	.3514092	.3529102	416
27	.4244927	.4165733	1289	.8169909	.8203272	477	.3543841	.3558308	410
28	0.4086219	0.4006392	-1307	0.8236006	0.8268109	+ 458	0.3572503	0.3586425	+ 403
29	.3926256	.3845818	1324	.8299579	.8330413	440	.3600072	.3613444	396
30	.3765083	.3684056	1342	.8360608	.8390162	421	.3626539	.3639356	389
Dec. 1	.3602743	.3521150	1359	.8419072	.8447336	401	.3651894	.3664151	381
2	.3439282	.3357146	1376	.8474951	.8501913	381	.3676128	.3687823	374
3	0.3274747	0.3192091	-1393	0.8528222	0.8553873	+ 361	0.3699234	0.3710360	+ 366
4	.3109185	.3026034	1409	.8578865	.8603194	340	.3721201	.3731754	358
5	.2942645	.2859025	1425	.8626859	.8649858	319	.3742020	.3751997	350
6	.2775174	.2691115	1441	.8672187	.8693844	298	.3761684	.3771080	341
7	.2606839	.2522358	1457	.8714828	.8735136	276	.3780185	.3788997	333
8	0.2437677	0.2352805	-1472	0.8754766	0.8773716	+ 254	0.3797515	0.3805738	+ 324
9	.2267748	.2182512	1487	.8791985	.8809571	232	.3813666	.3821297	315
10	.2097104	.2011153	1501	.8826471	.8842685	209	.3828631	.3835667	306
11	.1925803	.1839922	1515	.8858210	.8873046	186	.3842405	.3848844	297
12	.1753898	.1667737	1529	.8887191	.8900643	162	.3854983	.3860822	287
13	0.1581446	0.1495032	-1542	0.8913402	0.8925466	+ 138	0.3866359	0.3871595	+ 277
14	.1408503	.1321865	1555	.8936834	.8947506	114	.3876529	.3881160	267
15	.1235126	.1148292	1567	.8957480	.8966756	89	.3885489	.3889514	257
16	.1061371	.0974369	1579	.8975333	.8983210	64	.3893236	.3896654	247
17	.0887295	.0800155	1591	.8990387	.8996864	39	.3899769	.3902579	236
18	0.0712955	0.0625704	-1602	0.9002639	0.9007714	+ 13	0.3905085	0.3907286	+ 226
19	.0538409	.0451075	1613	.9012088	.9015761	- 13	.3909182	.3910774	215
20	.0363709	.0276320	1623	.9018733	.9021004	39	.3912062	.3913045	204
21	.0188914	.0101497	1633	.9022574	.9023443	65	.3913724	.3914098	193
22	.0014077	.00073341	1642	.9023612	.9023081	92	.3914169	.3913936	181
23	0.0160749	0.0248141	-1650	0.9021851	0.9019922	- 119	0.3913399	0.3912559	+ 170
24	.0335510	.0422851	1659	.9017294	.9013968	146	.3911416	.3909970	158
25	.0510156	.0597420	1666	.9009945	.9005225	174	.3908222	.3906171	147
26	.0684636	.0771798	1673	.8999809	.8993696	202	.3903818	.3901164	135
27	.0858900	.0945936	1680	.8986888	.8979385	230	.3898208	.3894951	123
28	0.1032900	0.1119784	-1686	0.8971188	0.8962296	- 259	0.3891393	0.3887534	+ 111
29	.1206584	.1293293	1691	.8952710	.8942430	287	.3883374	.3878914	98
30	.1379904	.1466411	1696	.8931457	.8919792	316	.3874154	.3869094	86
31	.1552808	.1639088	1700	.8907435	.8894386	345	.3863734	.3858075	73
32	0.1725245	0.1811271	-1704	0.8880645	0.8866214	- 374	0.3852116	0.3845858	+ 60
	+	+		-	-		-	-	

PRECESSION, NUTATION, &c., 1928.

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Mean Noon.	LONGITUDE.			Appar- ent Obliqui- ty.	OBLIQUITY.		Mean Noon.	LONGITUDE.			Appar- ent Obliqui- ty.	OBLIQUITY.			
	Pre- cession from 1928.0	Nutation.			Nutation.			Pre- cession from 1928.0	Nutation.			Nutation.			
		ΔL	$d L$		$\Delta \omega$	$d \omega$			ΔL	$d L$		$\Delta \omega$	$d \omega$		
	"	"	"	23° 26'	"	"		"	"	"	23° 26'	"	"		
Jan.	1	-01	16.30	-17	56.67	1.53	+08	Feb.	16	6.32	15.29	-11	57.74	2.66	-09
	2	+12	16.26	-22	56.69	1.54	+04		17	6.45	15.30	-02	57.76	2.68	-09
	3	26	16.21	-22	56.70	1.56	-01		18	6.59	15.32	+07	57.79	2.71	-08
	4	40	16.16	-17	56.72	1.58	-06		19	6.73	15.33	+14	57.81	2.73	-05
	5	54	16.12	-07	56.73	1.60	-09		20	6.87	15.35	+18	57.84	2.76	00
	6	67	16.07	+05	56.75	1.61	-10		21	7.01	15.37	+16	57.86	2.78	+04
	7	81	16.02	+16	56.77	1.63	-08		22	7.14	15.39	+10	57.88	2.81	+08
	8	95	15.98	+24	56.79	1.65	-05		23	7.28	15.41	+01	57.91	2.83	+10
	9	1.09	15.94	+27	56.80	1.67	-02		24	7.42	15.43	-09	57.93	2.85	+09
	10	1.23	15.89	+26	56.82	1.69	+03		25	7.56	15.46	-17	57.95	2.88	+07
	11	1.36	15.85	+20	56.84	1.71	+06		26	7.69	15.48	-21	57.97	2.90	+02
	12	1.50	15.81	+12	56.86	1.73	+08		27	7.83	15.51	-19	57.99	2.92	-03
	13	1.64	15.77	+03	56.88	1.76	+09		28	7.97	15.53	-12	58.01	2.94	-07
	14	1.78	15.73	-07	56.91	1.78	+08		29	8.11	15.56	-02	58.03	2.96	-09
	15	1.91	15.70	-15	56.93	1.80	+06	Mar.	1	8.24	15.59	+10	58.05	2.98	-09
	16	2.05	15.66	-20	56.95	1.83	+03		2	8.38	15.62	+19	58.07	3.00	-08
	17	2.19	15.63	-22	56.97	1.85	-01		3	8.52	15.65	+25	58.09	3.02	-04
	18	2.33	15.59	-20	56.99	1.87	-05		4	8.66	15.68	+27	58.10	3.04	00
	19	2.46	15.56	-15	57.02	1.90	-07		5	8.79	15.72	+24	58.12	3.06	+04
	20	2.60	15.53	-07	57.04	1.92	-09		6	8.93	15.75	+17	58.14	3.08	+07
	21	2.74	15.50	+02	57.07	1.95	-09		7	9.07	15.78	+08	58.15	3.09	+09
	22	2.88	15.48	+11	57.09	1.97	-07		8	9.21	15.82	-02	58.17	3.11	+09
	23	3.01	15.45	+17	57.12	2.00	-03		9	9.34	15.85	-11	58.18	3.13	+07
	24	3.15	15.43	+18	57.14	2.03	+01		10	9.48	15.89	-18	58.20	3.14	+04
	25	3.29	15.40	+15	57.17	2.05	+06		11	9.62	15.93	-22	58.21	3.16	+01
	26	3.43	15.38	+07	57.19	2.08	+09		12	9.76	15.96	-23	58.22	3.17	-03
	27	3.56	15.36	-03	57.22	2.11	+10		13	9.90	16.00	-20	58.23	3.18	-06
	28	3.70	15.34	-13	57.24	2.13	+09		14	10.03	16.04	-14	58.24	3.19	-09
	29	3.84	15.32	-20	57.27	2.16	+05		15	10.17	16.08	-05	58.25	3.21	-09
	30	3.98	15.31	-22	57.29	2.19	+01		16	10.31	16.11	+04	58.26	3.22	-09
	31	4.12	15.29	-18	57.32	2.22	-04		17	10.45	16.15	+11	58.27	3.23	-06
Feb.	1	4.25	15.28	-10	57.35	2.24	-08		18	10.58	16.19	+16	58.28	3.24	-02
	2	4.39	15.27	+01	57.37	2.27	-09		19	10.72	16.23	+15	58.29	3.25	+03
	3	4.53	15.26	+12	57.40	2.30	-09		20	10.86	16.27	+11	58.30	3.26	+07
	4	4.67	15.26	+21	57.43	2.33	-07		21	11.00	16.31	+03	58.30	3.26	+10
	5	4.80	15.25	+26	57.45	2.36	-03		22	11.13	16.35	-07	58.31	3.27	+10
	6	4.94	15.25	+26	57.48	2.38	+01		23	11.27	16.39	-15	58.31	3.28	+08
	7	5.08	15.24	+22	57.51	2.41	+05		24	11.41	16.42	-20	58.32	3.28	+04
	8	5.22	15.24	+14	57.53	2.44	+08		25	11.55	16.46	-20	58.32	3.29	-01
	9	5.35	15.24	+05	57.56	2.47	+09		26	11.68	16.50	-14	58.33	3.29	-06
	10	5.49	15.24	-05	57.59	2.50	+08		27	11.82	16.54	-04	58.33	3.30	-09
	11	5.63	15.25	-13	57.61	2.52	+06		28	11.96	16.58	+08	58.33	3.30	-10
	12	5.77	15.25	-19	57.64	2.55	+04		29	12.10	16.61	+18	58.33	3.30	-09
	13	5.90	15.26	-22	57.66	2.58	00		30	12.23	16.65	+25	58.33	3.30	-05
	14	6.04	15.27	-22	57.69	2.60	-04		31	12.37	16.68	+28	58.33	3.30	-01
	15	6.18	15.28	-18	57.71	2.63	-07	Apr.	1	12.51	16.72	+26	58.33	3.30	+03
	16	6.32	15.29	-11	57.74	2.66	-09		2	12.65	16.75	+20	58.33	3.30	+06

Mean Noon.	LONGITUDE.			Appar- ent Obliqui- ty.	OBLIQUITY.		Mean Noon.	LONGITUDE.			Appar- ent Obliqui- ty.	OBLIQUITY.			
	Pre- cession from 1925.0	Nutation.			Nutation.	Pre- cession from 1928.0		Nutation.		Nutation.					
		ΔL	$d L$					$\Delta \omega$	$d \omega$			ΔL	$d L$	$\Delta \omega$	$d \omega$
		--		23° 26'	+				--		23° 26'	+			
Apr.	2	12.65	16.75	+20	58.33	3.30	+06	May	18	18.98	17.14	-24	57.91	2.95	+02
	3	12.79	16.79	+11	58.33	3.30	+08		19	19.12	17.12	-21	57.90	2.94	-03
	4	12.92	16.82	+02	58.33	3.30	+09		20	19.25	17.09	-13	57.89	2.93	-07
	5	13.06	16.85	-08	58.32	3.30	+08		21	19.39	17.07	-02	57.88	2.92	-10
	6	13.20	16.89	-16	58.32	3.30	+05		22	19.53	17.04	+11	57.87	2.91	-10
	7	13.34	16.92	-21	58.32	3.30	+02		23	19.67	17.02	+22	57.87	2.91	-08
	8	13.47	16.95	-22	58.31	3.29	-02		24	19.80	16.99	+28	57.86	2.90	-04
	9	13.61	16.98	-20	58.30	3.29	-05		25	19.94	16.96	+30	57.85	2.89	00
	10	13.75	17.00	-16	58.30	3.28	-08		26	20.08	16.93	+27	57.84	2.89	+04
	11	13.89	17.03	08	58.29	3.28	-09		27	20.22	16.89	+20	57.84	2.88	+07
	12	14.02	17.06	00	58.29	3.28	-09		28	20.35	16.86	+10	57.83	2.88	+09
	13	14.16	17.08	+08	58.28	3.27	-07		29	20.49	16.83	00	57.82	2.87	+09
	14	14.30	17.11	+13	58.27	3.26	-03		30	20.63	16.79	-09	57.82	2.87	+07
	15	14.44	17.13	+15	58.27	3.26	+02		31	20.77	16.76	-16	57.81	2.86	+04
	16	14.57	17.15	+11	58.26	3.25	+06	June	1	20.90	16.72	-20	57.81	2.86	+01
	17	14.71	17.17	+04	58.25	3.24	+09		2	21.04	16.68	-20	57.80	2.86	-03
	18	14.85	17.19	06	58.24	3.24	+10		3	21.18	16.64	-17	57.80	2.85	-07
	19	14.99	17.21	-15	58.23	3.23	+09		4	21.32	16.61	-11	57.80	2.85	-09
	20	15.12	17.23	-21	58.22	3.22	+05		5	21.45	16.57	-03	57.79	2.85	-09
	21	15.26	17.24	-22	58.21	3.21	+01		6	21.59	16.53	+06	57.79	2.85	-08
	22	15.40	17.26	-17	58.20	3.20	-04		7	21.73	16.49	+12	57.79	2.85	-06
	23	15.54	17.27	-08	58.19	3.19	-08		8	21.87	16.44	+15	57.79	2.85	-01
	24	15.68	17.28	+04	58.18	3.18	-10		9	22.01	16.40	+14	57.79	2.85	+03
	25	15.81	17.29	+16	58.17	3.18	-09		10	22.14	16.36	+08	57.79	2.85	+07
	26	15.95	17.30	+24	58.16	3.17	-07		11	22.28	16.32	-01	57.79	2.85	+10
	27	16.09	17.31	+29	58.15	3.16	-03		12	22.42	16.27	-11	57.79	2.86	+10
	28	16.23	17.31	+29	58.14	3.15	+02		13	22.56	16.23	-20	57.79	2.86	+08
	29	16.36	17.32	+24	58.13	3.14	+06		14	22.69	16.18	-25	57.79	2.86	+04
	30	16.50	17.32	+16	58.11	3.12	+08		15	22.83	16.14	-25	57.80	2.87	-01
May	1	16.64	17.32	-06	58.10	3.11	+09		16	22.97	16.09	-19	57.80	2.87	-06
	2	16.78	17.32	-04	58.09	3.10	+08		17	23.11	16.05	-08	57.80	2.88	-09
	3	16.91	17.32	-13	58.08	3.09	+06		18	23.24	16.00	+05	57.81	2.88	-10
	4	17.05	17.32	-18	58.07	3.08	+03		19	23.38	15.96	+17	57.81	2.89	-09
	5	17.19	17.32	-21	58.05	3.07	-01		20	23.52	15.91	+26	57.82	2.90	-06
	6	17.33	17.31	-20	58.04	3.06	-04		21	23.66	15.87	+29	57.83	2.90	-01
	7	17.46	17.31	-10	58.03	3.05	-07		22	23.79	15.82	+28	57.83	2.91	+03
	8	17.60	17.30	-10	58.02	3.04	-09		23	23.93	15.78	+22	57.84	2.92	+07
	9	17.74	17.29	-02	58.01	3.03	-09		24	24.07	15.73	+13	57.85	2.93	+09
	10	17.88	17.28	+07	58.00	3.02	-08		25	24.21	15.69	+03	57.86	2.94	+09
	11	18.01	17.26	+12	57.99	3.01	-05		26	24.34	15.64	-06	57.87	2.95	+08
	12	18.15	17.25	+15	57.98	3.00	00		27	24.48	15.60	-14	57.88	2.96	+05
	13	18.29	17.24	+12	57.96	2.99	+05		28	24.62	15.55	-18	57.89	2.97	+02
	14	18.43	17.22	+05	57.95	2.98	+08		29	24.76	15.51	-19	57.90	2.99	-02
	15	18.56	17.20	-04	57.94	2.97	+10		30	24.90	15.47	-17	57.91	3.00	-06
	16	18.70	17.18	-14	57.93	2.96	+10	July	1	25.03	15.42	-12	57.92	3.01	-08
	17	18.84	17.16	-21	57.92	2.95	+07		2	25.17	15.38	-04	57.94	3.03	-10
	18	18.98	17.14	-24	57.91	2.95	+02		3	25.31	15.34	+04	57.95	3.04	-09

PRECESSION, NUTATION, &c., 1928.

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Mean Noon.	LONGITUDE.			Appar-ent Obliq-uity.	OBLIQUITY.		Mean Noon.	LONGITUDE.			Appar-ent Obliq-uity.	OBLIQUITY.			
	Pre-cession from 1928-0	Nutation.			Nutation.			Pre-cession from 1928-0	Nutation.			Nutation.			
		ΔL	$d L$		$\Delta \omega$	$d \omega$			ΔL	$d L$		$\Delta \omega$	$d \omega$		
		—	+	23° 26'	+	—			—	+	23° 26'	+	—		
July	3	25° 31	15° 34	+04	57° 95	3° 04	—09	Aug.	18	31° 64	14° 45	+08	58° 93	4° 09	+09
	4	25° 45	15° 30	+12	57° 96	3° 06	—07		19	31° 78	14° 46	—02	58° 96	4° 11	+09
	5	25° 58	15° 25	+16	57° 98	3° 07	—03		20	31° 91	14° 47	—10	58° 98	4° 13	+07
	6	25° 72	15° 21	+17	57° 99	3° 09	+02		21	32° 05	14° 49	—16	59° 00	4° 16	+04
	7	25° 86	15° 17	+12	58° 01	3° 11	+06		22	32° 19	14° 50	—19	59° 02	4° 18	—00
	8	26° 00	15° 13	+04	58° 02	3° 12	+09		23	32° 33	14° 52	—19	59° 05	4° 21	—04
	9	26° 13	15° 10	—07	58° 04	3° 14	+10		24	32° 46	14° 53	—16	59° 07	4° 23	—07
	10	26° 27	15° 06	—17	58° 06	3° 16	+09		25	32° 60	14° 55	—09	59° 09	4° 25	—09
	11	26° 41	15° 02	—24	58° 07	3° 18	+05		26	32° 74	14° 57	—01	59° 11	4° 27	—09
	12	26° 55	14° 98	—26	58° 09	3° 20	+01		27	32° 88	14° 59	+07	59° 13	4° 30	—08
	13	26° 68	14° 95	—22	58° 11	3° 22	—04		28	33° 01	14° 61	+14	59° 15	4° 32	—05
	14	26° 82	14° 92	—13	58° 13	3° 24	—08		29	33° 15	14° 63	+17	59° 17	4° 34	—01
	15	26° 96	14° 88	—01	58° 15	3° 26	—10		30	33° 29	14° 66	+16	59° 19	4° 36	+03
	16	27° 10	14° 85	+11	58° 17	3° 28	—09		31	33° 43	14° 68	+11	59° 21	4° 38	+07
	17	27° 23	14° 82	+21	58° 19	3° 30	—07	Sept.	1	33° 56	14° 70	+02	59° 23	4° 40	+10
	18	27° 37	14° 79	+27	58° 21	3° 32	—03		2	33° 70	14° 73	—08	59° 25	4° 42	+10
	19	27° 51	14° 76	+28	58° 23	3° 34	+02		3	33° 84	14° 76	—18	59° 27	4° 44	+08
	20	27° 65	14° 73	+23	58° 25	3° 36	+06		4	33° 98	14° 78	—23	59° 28	4° 46	+04
	21	27° 79	14° 70	+15	58° 27	3° 39	+08		5	34° 12	14° 81	—23	59° 30	4° 48	—01
	22	27° 92	14° 68	+06	58° 29	3° 41	+09		6	34° 25	14° 84	—18	59° 32	4° 49	—06
	23	28° 06	14° 65	—04	58° 31	3° 43	+08		7	34° 39	14° 87	—08	59° 33	4° 51	—09
	24	28° 20	14° 63	—12	58° 34	3° 46	+06		8	34° 53	14° 90	+04	59° 35	4° 53	—10
	25	28° 34	14° 60	—17	58° 36	3° 48	+03		9	34° 67	14° 94	—16	59° 36	4° 54	—09
	26	28° 47	14° 58	—19	58° 38	3° 50	—01		10	34° 80	14° 97	+24	59° 38	4° 56	—05
	27	28° 61	14° 56	—18	58° 40	3° 53	—05		11	34° 94	15° 00	+27	59° 39	4° 57	—01
	28	28° 75	14° 54	—14	58° 43	3° 55	—08		12	35° 08	15° 03	+25	59° 40	4° 59	+03
	29	28° 89	14° 53	—07	58° 45	3° 58	—09		13	35° 22	15° 07	+19	59° 42	4° 60	+07
	30	29° 02	14° 51	+02	58° 47	3° 60	—09		14	35° 35	15° 10	+11	59° 43	4° 61	—09
	31	29° 16	14° 49	+10	58° 50	3° 63	—08		15	35° 49	15° 14	+01	59° 44	4° 63	+09
Aug.	1	29° 30	14° 48	+16	58° 52	3° 65	—04		16	35° 63	15° 17	—08	59° 45	4° 64	+08
	2	29° 44	14° 47	+18	58° 55	3° 68	—00		17	35° 77	15° 21	—15	59° 46	4° 65	+05
	3	29° 57	14° 46	+15	58° 57	3° 70	+05		18	35° 90	15° 24	—19	59° 47	4° 66	+01
	4	29° 71	14° 45	+08	58° 59	3° 73	+09		19	36° 04	15° 28	—20	59° 48	4° 67	—02
	5	29° 85	14° 44	—02	58° 62	3° 75	+10		20	36° 18	15° 31	—17	59° 49	4° 68	—06
	6	29° 99	14° 43	—12	58° 64	3° 78	+10		21	36° 32	15° 35	—12	59° 49	4° 69	—08
	7	30° 12	14° 43	—21	58° 67	3° 81	+07		22	36° 45	15° 39	—04	59° 50	4° 70	—09
	8	30° 26	14° 42	—25	58° 69	3° 83	+02		23	36° 59	15° 42	+04	59° 50	4° 70	—09
	9	30° 40	14° 42	—23	58° 72	3° 86	—03		24	36° 73	15° 46	+11	59° 51	4° 71	—06
	10	30° 54	14° 42	—16	58° 74	3° 88	—07		25	36° 87	15° 50	+15	59° 52	4° 72	—03
	11	30° 68	14° 42	—05	58° 77	3° 91	—10		26	37° 01	15° 53	+16	59° 52	4° 72	+02
	12	30° 81	14° 42	+07	58° 79	3° 93	—10		27	37° 14	15° 57	+12	59° 53	4° 73	+06
	13	30° 95	14° 42	+18	58° 81	3° 96	—08		28	37° 28	15° 60	+04	59° 53	4° 73	+09
	14	31° 09	14° 42	+25	58° 84	3° 99	—04		29	37° 42	15° 64	—06	59° 53	4° 74	+10
	15	31° 23	14° 43	+27	58° 86	4° 01	—00		30	37° 56	15° 67	—15	59° 53	4° 74	+09
	16	31° 36	14° 43	+24	58° 89	4° 04	+05	Oct.	1	37° 69	15° 71	—22	59° 53	4° 74	+06
	17	31° 50	14° 44	+17	58° 91	4° 06	+08		2	37° 83	15° 74	—23	59° 53	4° 74	+01
	18	31° 64	14° 45	+08	58° 93	4° 09	+09		3	37° 97	15° 78	—19	59° 53	4° 74	—04

PRECESSION, NUTATION, &c., 1928.

Mean. Noon	LONGITUDE.			Appar- ent Obliqu- ity.	OBLIQUITY.		Mean Noon	LONGITUDE.			Appar- ent Obliqu- ity.	OBLIQUITY.				
	Pre- cession from 1928.0	Nutation.			Nutation.			Pre- cession from 1928.0	Nutation.			Nutation.				
		ΔL	$d L$		$\Delta \omega$	$d \omega$			ΔL	$d L$		$\Delta \omega$	$d \omega$			
		—		23°26'	+			—		23°26'	+					
Oct.	3	37°97	15°78	—°19	59°53	4°74	—°04	Nov.	18	44°30	16°11	+°13	59°09	4°36	—°05	
	4	38°11	15°81	—°10	59°53	4°74	—°08		19	44°44	16°08	+°15	59°07	4°34	—°01	
	5	38°24	15°84	+°02	59°53	4°74	—°10		20	44°57	16°05	+°13	59°06	4°33	+°04	
	6	38°38	15°87	+°14	59°53	4°74	—°10		21	44°71	16°02	+°07	59°05	4°32	+°08	
	7	38°52	15°90	+°23	59°53	4°74	—°07		22	44°85	15°99	—°02	59°04	4°31	+°10	
	8	38°66	15°93	+°28	59°52	4°74	—°03		23	44°99	15°96	—°13	59°03	4°30	+°10	
	9	38°79	15°96	+°28	59°52	4°74	+°02		24	45°12	15°92	—°22	59°02	4°30	+°08	
	10	38°93	15°99	+°23	59°51	4°73	+°06		25	45°26	15°88	—°27	59°01	4°29	+°04	
	11	39°07	16°02	+°14	59°51	4°73	+°09		26	45°40	15°85	—°26	59°00	4°28	—°01	
	12	39°21	16°05	+°04	59°50	4°73	+°09		27	45°54	15°81	—°20	58°99	4°27	—°06	
	13	39°34	16°07	—°06	59°50	4°72	+°08		28	45°68	15°77	—°09	58°98	4°26	—°09	
	14	39°48	16°10	—°13	59°49	4°72	+°06		29	45°81	15°73	+°05	58°97	4°26	—°10	
	15	39°62	16°12	—°18	59°49	4°71	+°02		30	45°95	15°68	+°17	58°97	4°25	—°09	
	16	39°76	16°15	—°20	59°48	4°71	—°01		Dec.	1	46°09	15°64	+°27	58°96	4°24	—°06
	17	39°90	16°17	—°18	59°47	4°70	—°05			2	46°23	15°60	+°31	58°95	4°24	—°01
	18	40°03	16°19	—°13	59°46	4°69	—°08			3	46°36	15°55	+°29	58°94	4°23	+°04
	19	40°17	16°21	—°07	59°45	4°68	—°09			4	46°50	15°50	+°23	58°94	4°23	+°07
	20	40°31	16°23	+°01	59°44	4°68	—°09			5	46°64	15°46	+°13	58°93	4°23	+°09
21	40°45	16°24	+°08	59°43	4°67	—°07	6	46°78		15°41	+°03	58°93	4°22	+°09		
22	40°58	16°26	+°13	59°42	4°66	—°04	7	46°91		15°36	—°07	58°92	4°22	+°08		
23	40°72	16°27	+°15	59°41	4°65	+°01	8	47°05		15°31	—°14	58°92	4°22	+°05		
24	40°86	16°28	+°12	59°40	4°64	+°05	9	47°19		15°26	—°18	58°92	4°22	+°01		
25	41°00	16°30	+°05	59°39	4°63	+°09	10	47°33		15°20	—°18	58°92	4°22	—°03		
26	41°13	16°31	—°04	59°38	4°62	+°10	11	47°46		15°15	—°15	58°92	4°21	—°06		
27	41°27	16°32	—°14	59°37	4°61	+°10	12	47°60		15°10	—°09	58°91	4°22	—°09		
28	41°41	16°32	—°22	59°36	4°60	+°07	13	47°74		15°05	—°02	58°92	4°22	—°09		
29	41°55	16°33	—°25	59°34	4°59	+°02	14	47°88		14°99	+°06	58°92	4°22	—°09		
30	41°68	16°33	—°22	59°33	4°58	—°03	15	48°01		14°94	+°12	58°92	4°22	—°06		
31	41°82	16°33	—°14	59°32	4°57	—°07	16	48°15		14°88	+°16	58°92	4°23	—°02		
Nov.	1	41°96	16°34	—°03	59°31	4°55	—°10	17		48°29	14°83	+°15	58°92	4°23	+°02	
	2	42°10	16°34	+°10	59°29	4°54	—°10	18		48°43	14°77	+°10	58°92	4°23	+°06	
	3	42°23	16°33	+°21	59°28	4°53	—°08	19	48°56	14°72	+°01	58°93	4°24	+°09		
	4	42°37	16°33	+°28	59°27	4°52	—°04	20	48°70	14°66	—°10	58°93	4°24	+°10		
	5	42°51	16°32	+°30	59°25	4°51	+°01	21	48°84	14°60	—°20	58°94	4°25	+°09		
	6	42°65	16°32	+°26	59°24	4°50	+°05	22	48°98	14°55	—°27	58°94	4°26	+°06		
	7	42°79	16°31	+°19	59°23	4°48	+°08	23	49°12	14°49	—°29	58°95	4°27	+°01		
	8	42°92	16°30	+°09	59°21	4°47	+°09	24	49°25	14°43	—°24	58°96	4°27	—°05		
	9	43°06	16°29	—°02	59°20	4°46	+°09	25	49°39	14°38	—°15	58°97	4°28	—°08		
	10	43°20	16°27	—°10	59°19	4°45	+°07	26	49°53	14°32	—°02	58°97	4°29	—°10		
	11	43°34	16°26	—°16	59°17	4°44	+°04	27	49°67	14°27	+°12	58°98	4°30	—°10		
	12	43°47	16°24	—°19	59°16	4°42	00	28	49°80	14°21	+°22	58°99	4°32	—°07		
	13	43°61	16°22	—°18	59°15	4°41	—°04	29	49°94	14°16	+°29	59°00	4°33	—°02		
	14	43°75	16°20	—°14	59°14	4°40	—°07	30	50°08	14°10	+°29	59°02	4°34	+°02		
	15	43°89	16°18	—°08	59°12	4°39	—°09	31	50°22	14°05	+°25	59°03	4°35	+°06		
	16	44°02	16°16	00	59°11	4°38	—°09	32	50°35	13°99	+°16	59°04	4°37	+°09		
	17	44°16	16°13	+°07	59°10	4°37	—°08									
	18	44°30	16°11	+°13	59°09	4°36	—°05									

MEAN PLACES OF STARS, 1928.

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FOR JANUARY 1^d.595

Catalogue No.	Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
			h m s	s	s	° ' "		
1504	2 Ceti ..	4.62	00 00 03.151	+ 3.0745	+ .0017	S. 17 44 12.00	+20.049	+ .004
	3 α Andromedæ ..	2.15	00 04 39.626	3.0972	+ .0094	N.28 41 34.78	19.883	- .157
	4 β Cassiopeia ..	2.42	00 05 19.361	3.1905	+ .0664	N.58 45 09.81	19.862	- .177
10	γ Pegasi ..	2.87	00 09 31.488	+ 3.0869	- .0006	N.14 47 00.33	20.025	- .002
13	δ Octantis ..	7.22	00 12 16.902	- 0.2221	+ .0207	S. 88 45 47.86	20.020	+ .004
16	1 Ceti ..	3.75	00 15 45.557	+ 3.0566	- .0013	S. 9 13 22.25	+19.975	- .022
17	ζ Tucanæ ..	4.34	00 16 19.947	3.1407	+ .2746	S. 65 17 51.92	21.165	+1.171
18	δ Piscium ..	5.58	00 16 53.400	3.0854	- .0009	N. 7 47 25.98	20.008	+ .018
21	44 Piscium ..	5.99	00 21 42.614	3.0749	- .0013	N. 1 32 28.42	19.951	- .003
22	β Hydri ..	2.90	00 21 59.735	3.1827	+ .6950	S. 77 39 35.08	20.264	+ .312
23	α Phœnicis ..	2.44	00 22 43.772	+ 2.9689	+ .0182	S. 42 41 48.32	+19.560	- .385
25	12 Ceti ..	6.05	00 26 21.814	3.0616	+ .0005	S. 4 21 17.66	19.911	- .001
35	ϵ Andromedæ ..	4.52	00 34 44.682	3.1661	- .0182	N.28 55 16.08	19.571	- .244
36	δ Andromedæ ..	3.49	00 35 28.272	3.2033	+ .0092	N.30 28 02.00	19.718	- .087
37	α Cassiopeia ..	var.	00 36 24.481	3.3930	+ .0051	N.56 08 34.26	19.768	- .024
39	β Ceti ..	2.24	00 39 58.572	+ 3.0119	+ .0162	S. 18 22 53.39	+19.783	+ .043
47	δ Piscium ..	4.55	00 44 56.651	3.1111	+ .0054	N. 7 11 36.78	19.617	- .043
52	20 Ceti ..	4.92	00 49 19.593	3.0652	.0000	S. 1 32 05.47	19.577	- .005
53	γ Cassiopeia ..	2.25	00 52 20.770	3.6063	+ .0024	N.60 19 38.24	19.524	.000
55	μ Andromedæ ..	3.94	00 52 44.934	3.3241	+ .0122	N.38 06 33.09	19.552	+ .037
57	α Sculptoris ..	4.39	00 55 08.273	+ 2.8917	+ .0008	S. 29 44 46.22	+19.479	+ .012
59	ϵ Piscium ..	4.45	00 59 12.203	3.1119	- .0059	N. 7 30 10.49	19.411	+ .032
61	72 Piscium ..	5.65	01 01 17.077	3.1650	+ .0004	N.14 33 33.82	19.398	+ .066
63	β Phœnicis m.	3.35	01 02 52.439	2.6797	- .0035	S. 47 06 13.50	19.313	+ .018
69	β Andromedæ ..	2.37	01 05 41.588	3.3536	+ .0138	N.35 14 21.46	19.118	- .109
74	ζ 1 Piscium ..	5.57	01 09 57.986	+ 3.1330	+ .0094	N. 7 11 42.37	+19.074	- .044
81	θ Ceti ..	3.83	01 20 25.418	2.9984	- .0054	S. 8 33 15.78	18.615	- .208
83	δ Cassiopeia ..	2.80	01 21 05.268	3.9090	+ .0386	N.59 51 42.41	18.762	- .041
85	γ Phœnicis ..	3.40	01 25 14.428	2.6065	- .0025	S. 43 41 11.59	18.476	- .198
88	η Piscium ..	3.72	01 27 37.589	3.2077	+ .0015	N.14 58 30.78	18.598	.000
96	α Eridani ..	0.60	01 35 02.133	+ 2.2361	+ .0117	S. 57 36 07.34	+18.320	- .026
95	α Ursæ Minoris ..	2.12	01 35 49.177	31.9801	+ .1714	N.88 55.05.98	18.316	- .002
99	γ Piscium ..	4.68	01 37 40.878	3.1204	- .0020	N. 5 07 26.21	18.264	+ .013
104	θ Piscium ..	4.50	01 41 35.294	3.1661	+ .0046	N. 8 47 46.04	18.170	+ .063
109	ζ Ceti ..	3.92	01 47 54.310	2.9606	+ .0021	S. 10 41 24.27	17.837	- .027
111	ϵ Cassiopeia ..	3.44	01 49 11.584	+ 4.2963	+ .0041	N.63 18 59.05	+17.797	- .015
114	β Arietis ..	2.72	01 50 39.456	3.3108	+ .0065	N.20 27 24.47	17.649	- .104
119	α Hydri ..	3.02	01 56 30.103	1.8910	+ .0373	S. 61 55 10.63	17.550	+ .040
120	ν Ceti ..	4.18	01 56 36.720	2.8262	+ .0088	S. 21 25 33.57	17.494	- .012
124	γ 1 Andromedæ ..	2.28	01 59 28.227	3.6756	+ .0038	N.41 59 06.40	17.337	- .045
125	α Arietis ..	2.23	02 03 06.536	+ 3.3781	+ .0133	N.23 07 22.05	+17.080	- .141
126	β Trianguli ..	3.08	02 05 15.073	3.5642	+ .0114	N.34 38 51.36	17.089	- .036
130	ζ 1 Ceti ..	4.54	02 09 10.806	3.1779	- .0018	N. 8 30 35.59	16.948	+ .005
133	67 Ceti ..	5.70	02 13 23.426	+ 2.9919	+ .0060	S. 6 45 11.24	+16.646	- .098

No. 10. *Algenib.*
No. 25. 11^m, 10^s, 190°.
No. 37. 2^m.1 to 2^m.6.

No. 63. 4^m.1-4^m.1, 2^s, 0°.
No. 74. 6^m.49 (ζ^2), 24^s, 64°.
No. 96. *Achernar.*

No. 95. *Polaris.* 8^m.79, 18^s, 215°.
No. 124. 5^m.08 (γ^2), 10^s, 62°.

(12961)

(NAUTICAL ALMANAC, 1928)

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MEAN PLACES OF STARS, 1928.

FOR JANUARY 1^d.595

Cata- logue No.	Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion	Declination.	Annual Variation.	Annual Proper Motion.
			^h ^m ^s	^s	^ε	[°] ['] ["]		
134	ε Eridani ..	3.78	02 13 56.231	+ 2.1433	+ .0088	S. 51 50 41.31	+ 16.703	- .015
135	θ Arctis ..	5.69	02 14 06.924	3.3339	- .0013	N. 19 34 08.32	16.715	+ .005
136	o Ceti ..	var.	02 15 42.395	3.0290	- .0008	S. 3 18 13.17	16.409	- .223
137	κ Fornacis ..	5.37	02 19 14.819	2.7444	+ .0135	S. 24 08 34.11	16.396	- .061
138	δ Hydri ..	4.26	02 20 27.717	1.0628	- .0090	S. 68 59 12.31	16.409	+ .013
143	ξ ² Ceti ..	4.34	02 24 19.632	+ 3.1877	+ .0022	N. 8 08 17.77	+ 16.202	+ .002
149	9 B Octantis.	7.76	02 31 15.697	- 8.7632	- .0020	S. 86 02 22.21	15.816	- .019
150	γ Ceti ..	5.04	02 32 05.539	+ 3.1464	- .0025	N. 5 16 48.01	15.775	- .015
154	δ Ceti ..	4.04	02 35 47.356	3.0736	+ .0005	N. 0 01 08.01	15.598	+ .009
163	γ ² Ceti ..	3.69	02 39 34.029	3.1070	- .0098	N. 2 56 00.02	15.240	- .139
164	π Ceti ..	4.39	02 40 41.671	+ 2.8545	- .0008	S. 14 09 46.15	+ 15.305	- .011
169	β Fornacis ..	4.50	02 46 04.573	2.5098	+ .0058	S. 32 42 26.90	15.179	+ .171
170	σ Arctis ..	5.46	02 47 30.773	+ 3.3098	+ .0014	N. 14 47 11.10	14.904	- .020
173	10 B Octantis	8.35	02 48 34.162	- 30.3189	- .0302	S. 88 27 37.78	14.840	- .022
175	ε Arietis m. ..	4.64	02 55 05.363	+ 3.4270	- .0018	N. 21 03 12.36	14.473	.000
176	θ ¹ Eridani ..	3.42	02 55 31.846	+ 2.2739	- .0053	S. 40 35 32.54	+ 14.478	+ .031
179	α Ceti ..	2.82	02 58 30.770	3.1344	- .0010	N. 3 48 29.94	14.197	- .068
181	γ Persei ..	3.08	02 59 34.060	4.3339	- .0009	N. 53 13 33.12	14.201	+ .001
183	μ Horologii ..	5.16	03 01 54.863	1.4120	- .0096	S. 60 00 59.10	14.006	- .048
185	β Persei ..	var.	03 03 28.524	3.8971	- .0002	N. 40 40 46.31	13.961	+ .004
187	δ Arietis ..	4.53	03 07 30.422	+ 3.4277	+ .0103	N. 19 27 19.95	+ 13.700	- .002
197	τ ¹ Arietis ..	5.17	03 17 03.915	3.4610	+ .0017	N. 20 53 19.21	13.056	- .023
200	α Persei ..	1.90	03 19 10.286	4.2745	+ .0023	N. 49 36 23.07	12.920	- .020
201	o Tauri ..	3.80	03 20 56.104	3.2263	- .0051	N. 8 46 35.97	12.754	- .068
207	f Tauri ..	4.28	03 26 53.643	3.3101	+ .0010	N. 12 41 28.23	12.424	+ .008
210	ε Eridani ..	3.81	03 29 32.182	+ 2.8255	- .0664	S. 9 42 03.28	+ 12.260	+ .026
211	45 G Horologii	5.60	03 30 25.782	1.7870	+ .0076	S. 50 37 19.96	12.264	+ .091
212	τ ⁵ Eridani ..	4.32	03 30 36.348	2.6482	+ .0018	S. 21 52 24.15	12.139	- .021
217	11 Tauri ..	6.15	03 36 27.960	3.5805	+ .0005	N. 25 05 52.56	11.741	- .008
218	δ Persei ..	3.10	03 37 47.338	4.2645	+ .0028	N. 47 33 31.96	11.625	- .030
221	δ Eridani ..	3.72	03 39 47.837	+ 2.8734	- .0065	S. 10 00 21.90	+ 12.259	+ .747
224	17 Tauri ..	3.81	03 40 35.684	3.5593	+ .0008	N. 23 53 17.79	11.413	- .041
228	η Tauri ..	2.96	03 43 11.970	+ 3.5630	+ .0008	N. 23 53 01.69	11.226	- .041
234	γ Hydri ..	3.17	03 48 20.009	- 0.9503	+ .0108	S. 74 27 35.90	11.010	+ .118
235	ζ Persei ..	2.91	03 49 36.000	+ 3.7672	- .0002	N. 31 40 16.20	10.789	- .010
238	ε Persei ..	2.96	03 53 00.908	+ 4.0213	+ .0015	N. 39 48 12.41	+ 10.526	- .021
240	γ Eridani ..	3.19	03 54 40.107	2.7981	+ .0038	S. 13 42 44.09	10.318	- .105
244	A Tauri ..	4.50	04 00 26.032	3.5440	+ .0058	N. 21 53 11.64	9.937	- .052
249	43 Tauri ..	5.67	04 04 58.035	3.4929	+ .0070	N. 19 25 12.88	9.619	- .024
251	o ¹ Eridani ..	4.14	04 08 20.920	2.9274	.0000	S. 7 01 26.75	9.476	+ .092
256	α Horologii ..	3.83	04 11 36.820	+ 1.9858	+ .0020	S. 42 28 15.47	+ 8.935	- .195
259	α Reticuli ..	3.36	04 13 29.519	0.7677	+ .0047	S. 62 39 13.38	9.036	+ .052
261	ν ⁴ Eridani ..	3.59	04 15 10.098	2.2692	+ .0042	S. 33 58 23.11	8.858	+ .006
262	γ Tauri ..	3.86	04 15 41.526	3.4119	+ .0072	N. 15 27 18.56	8.793	- .018
270	ε Tauri ..	3.63	04 24 24.515	+ 3.5011	+ .0070	N. 19 01 19.76	+ 8.088	- .032

No. 136. *Mina*. 2^m.0 to 9^m.6.No. 150. 10^m, 8", 83°.No. 163. 6^m.16 (γ¹), 3", 290°.No. 175. 5^m.25-5^m.55, 1".4, 200°.No. 176. 4^m.42 (θ²), 8".5, 85°.No. 185. *Algol*. 2^m.3 to 3^m.5.No. 235. 9^m, 13", 209°.No. 238. 7^m.93, 9", 10°.

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Catalogue No.	Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
			^h ^m ^s	^s	^s	[°] ['] ["]	["]	["]
278	α Tauri ..	1.06	04 31 47.162	+ 3.4405	+ .0039	N.16 21 57.35	+ 7.341	- .185
279	α Doradus ..	3.47	04 32 26.260	1.2942	+ .0049	S. 55 11 35.59	7.479	+ .005
282	ζ Eridani ..	3.98	04 34 52.902	2.7471	- .0050	S. 14 26 36.81	7.124	- .151
284	γ Tauri ..	4.33	04 37 55.187	3.5988	- .0007	N.22 49 13.14	7.017	- .009
288	μ Eridani ..	4.18	04 41 54.006	2.9987	+ .0003	S. 3 23 07.41	6.691	- .009
291	π^3 Orionis ..	3.31	04 45 55.749	+ 3.2554	+ .0306	N. 6 50 13.01	+ 6.388	+ .022
299	ϵ Aurigæ ..	2.90	04 52 18.026	3.9043	- .0005	N.33 03 13.43	5.823	- .013
301	ϵ Aurigæ ..	var.	04 56 47.842	4.3023	- .0002	N.43 43 06.91	5.456	- .002
307	η Aurigæ ..	3.28	05 01 27.667	4.2042	+ .0019	N.41 08 19.82	4.995	- .069
308	ϵ Leporis ..	3.29	05 02 24.686	2.5383	+ .0007	S. 22 27 59.95	4.913	- .071
310	β Eridani ..	2.92	05 04 18.496	+ 2.9483	- .0070	S. 5 10 41.73	+ 4.747	- .076
316	μ Leporis ..	3.30	05 09 41.689	2.6925	+ .0008	S. 16 17 22.48	4.339	- .025
318	β Orionis ..	0.34	05 11 04.570	2.8821	- .0006	S. 8 17 00.88	4.251	+ .004
319	α Aurigæ ..	0.21	05 11 21.986	4.4299	+ .0077	N.45 55 36.13	3.801	- .421
327	θ Orionis ..	4.65	05 18 05.080	3.0617	- .0008	S. 0 27 07.94	3.650	+ .004
328	η Orionis <i>m</i>	3.44	05 20 51.280	+ 3.0149	- .0013	S. 2 27 43.81	+ 3.404	- .003
330	γ Orionis ..	1.70	05 21 16.040	3.2166	- .0013	N. 6 17 09.22	3.365	- .006
331	β Tauri ..	1.78	05 21 44.273	3.7910	+ .0013	N.28 32 53.53	3.157	- .174
333	β Leporis ..	2.96	05 25 09.503	2.5692	- .0015	S. 20 48 56.52	2.951	- .085
335	α G Pictoris..	5.54	05 28 10.591	1.6483	+ .0011	S. 47 07 43.35	2.646	- .128
336	δ Orionis ..	2.48	05 28 19.593	+ 3.0640	- .0007	S. 0 21 03.86	+ 2.768	+ .006
338	α Leporis ..	2.69	05 29 33.189	2.6451	- .0007	S. 17 52 21.43	2.665	+ .010
343	ϵ Orionis ..	2.89	05 31 54.572	2.9339	- .0006	S. 5 57 20.77	2.463	+ .013
344	ϵ Orionis ..	1.75	05 32 33.503	3.0432	- .0008	S. 1 14 47.64	2.399	+ .004
345	β Doradus ..	3.81	05 32 59.795	0.5166	- .0031	S. 62 32 11.99	2.361	+ .005
346	ζ Tauri ..	3.00	05 33 20.384	+ 3.5846	- .0004	N.21 06 00.64	+ 2.308	- .018
349	α Columbæ ..	2.75	05 37 02.380	2.1708	- .0015	S. 34 06 40.99	1.989	- .016
350	ζ^1 Orionis ..	2.05	05 37 07.450	3.0263	- .0006	S. 1 58 45.30	2.007	+ .009
354	γ Tauri ..	5.51	05 43 14.178	+ 3.4970	- .0013	N.17 42 12.86	1.457	- .008
359	γ G Mensæ ..	6.24	05 44 06.726	- 11.6550	- .0059	S. 84 49 33.33	1.437	+ .049
357	κ Orionis ..	2.20	05 44 20.438	+ 2.8449	- .0002	S. 9 41 38.34	+ 1.369	.000
362	β Columbæ ..	3.22	05 48 25.184	2.1131	+ .0026	S. 35 47 40.02	1.417	+ .404
365	α Orionis ..	var.	05 51 16.355	3.2473	+ .0011	N. 7 23 42.21	0.777	+ .014
368	β Aurigæ ..	2.07	05 54 14.752	4.4001	- .0059	N.44 56 31.18	0.502	- .001
369	θ Aurigæ ..	2.72	05 54 48.611	+ 4.0907	+ .0034	N.37 12 33.54	0.378	- .076
374	γ B Octantis ..	6.74	05 58 48.856	- 15.7441	- .0230	S. 85 55 58.86	+ 0.108	+ .004
373	γ Geminorum ..	4.30	05 59 44.518	+ 3.6460	- .0014	N.23 16 07.57	- 0.077	- .100
377	ν Orionis ..	4.40	06 03 27.571	3.4247	- .0006	N.14 46 42.73	0.322	- .019
381	η Geminorum ..	var.	06 10 31.806	3.6208	- .0058	N.22 31 45.18	0.932	- .011
389	ζ Canis Majoris ..	3.10	06 17 32.832	2.3012	- .0015	S. 30 01 49.17	1.525	+ .008
390	μ Geminorum ..	3.19	06 18 36.226	+ 3.6291	+ .0031	N.22 33 07.50	- 1.736	- .110
394	β Canis Majoris ..	1.99	06 19 31.659	2.6410	- .0013	S. 17 55 08.55	1.702	+ .003
396	α Argus ..	-0.86	06 22 21.143	1.3307	+ .0009	S. 52 39 20.14	1.922	+ .030
399	ν Geminorum ..	4.06	06 24 41.234	3.5620	- .0013	N.20 15 33.23	2.166	- .012
403	ν Geminorum ..	1.93	06 33 33.118	+ 3.4654	+ .0019	N.16 27 43.85	- 2.967	- .043

No. 278. *Aldebaran*.

No. 284. $8^m, 63'', 213^\circ$.

No. 301. $3^m.3$ to $4^m.1$.

No. 318. *Rigel*. $6^m.66, 9'', 200^\circ$.

No. 319. *Capella*.

No. 328. $3^m.8-5^m.0, 1'', 80^\circ$.

No. 330. *Bellatrix*.

No. 333. $10^m, 3'', 290^\circ$.

No. 336. $6^m.87, 53'', 359^\circ$.

No. 343. $7^m.33, 11'', 141^\circ$.

No. 350. $4^m.21$ (ζ^2), $2''.5, 160^\circ$.

No. 365. *Betelgeuse*. $0^m.5-1^m.1$.

No. 369. $7^m.5, 2''.5, 340^\circ$.

No. 381. $3^m.3$ to $4^m.2, 9'', 1'', 290^\circ$.

No. 396. *Canopus*.

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Catalogue No.	Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
			^h ^m ^s	^s	^s	[°] ['] ["]		
406	γ Argus ..	3.18	06 35 33.411	+ 1.8345	- .0015	S. 43 07 54.94	- 3.098	- .001
408	ϵ Geminorum	3.18	06 39 30.125	3.6911	- .0014	N. 25 12 14.17	3.451	- .013
409	ξ Geminorum	3.40	06 41 14.862	3.3667	- .0090	N. 12 58 28.82	3.778	- .190
411	α Canis Maj. c.g.	-1.58	06 41 58.594	2.6434	- .0374	S. 16 36 58.37	4.859	- 1.209
417	α Pictoris ..	3.30	06 47 27.139	0.6156	- .0118	S. 61 51 49.24	3.854	+ .267
419	τ Argus ..	2.83	06 48 08.872	+ 1.4867	+ .0008	S. 50 31 40.80	- 4.238	- .058
422	θ Canis Majoris.	4.25	06 50 50.625	2.7868	- .0102	S. 11 56 50.12	4.424	- .013
426	ϵ Canis Majoris	1.63	06 55 47.689	2.3567	- .0010	S. 28 52 23.08	4.830	+ .002
427	α Canis Majoris	3.68	06 58 50.960	2.3886	- .0019	S. 27 49 50.75	5.094	- .003
428	ζ Geminorum	var.	06 59 50.320	3.5586	- .0015	N. 20 40 38.75	5.172	+ .002
429	η Canis Majoris	3.12	07 00 01.010	+ 2.5044	- .0011	S. 23 43 37.32	- 5.187	+ .002
430	γ Canis Majoris	4.07	07 00 29.999	2.7137	- .0008	S. 15 31 32.43	5.233	- .003
433	δ Canis Majoris	1.98	07 05 27.760	2.4384	- .0014	S. 26 16 40.12	5.640	+ .008
434	γ H Cephei ..	5.26	07 07 23.756	28.8487	- .0472	N. 87 09 52.66	5.847	- .037
439	γ Geminorum	5.31	07 09 14.191	3.4451	- .0003	N. 16 16 57.27	6.003	- .040
445	π Argus ..	2.74	07 14 35.919	+ 2.1179	- .0020	S. 36 58 01.58	- 6.391	+ .019
447	δ Geminorum	3.52	07 15 49.399	+ 3.5836	- .0029	N. 22 06 58.98	6.521	- .010
449	δ Volantis ..	4.02	07 16 52.252	- 0.0248	- .0017	S. 67 49 31.40	6.594	+ .004
452	η Canis Majoris	2.43	07 21 14.730	+ 2.3714	- .0021	S. 29 09 42.17	6.955	+ .003
453	β Canis Minoris	3.09	07 23 14.757	3.2534	- .0047	N. 8 26 08.77	7.157	- .036
457	σ Argus ..	3.28	07 26 56.695	+ 1.9013	- .0077	S. 43 09 17.36	- 7.235	+ .189
458	α Geminorum c.g.	1.58	07 30 00.406	+ 3.8315	- .0142	N. 32 02 51.56	7.774	- .103
462	A Octantis ..	7.75	07 31 18.032	- 48.8668	- .0317	S. 88 38 26.72	7.763	+ .013
463	Q Carinæ ..	4.92	07 33 52.850	+ 1.4844	+ .0017	S. 52 22 21.08	8.006	- .023
466	α Canis Min. c.g.	0.48	07 35 31.985	3.1400	- .0485	N. 5 24 38.55	9.150	- 1.035
468	α Monocerotis	4.07	07 37 48.383	+ 2.8657	- .0062	S. 9 22 55.33	- 8.316	- .019
470	β Geminorum	1.21	07 40 54.711	3.6727	- .0484	N. 28 12 05.41	8.594	- .051
475	ξ Argus ..	3.47	07 46 15.893	2.5222	- .0015	S. 24 40 41.00	8.966	- .001
489	χ Geminorum	5.04	07 59 05.883	3.6866	- .0029	N. 27 59 51.23	9.998	- .044
492	ζ Argus ..	2.27	08 01 03.156	2.1075	- .0037	S. 39 47 57.79	10.081	+ .021
495	ρ Argus ..	2.88	08 04 28.592	+ 2.5539	- .0073	S. 24 05 44.54	- 10.308	+ .051
498	γ Argus ..	2.22	08 07 18.736	1.8475	- .0025	S. 47 07 25.07	10.561	+ .010
500	α Puppis ..	5.05	08 10 01.337	2.7567	- .0021	S. 15 34 12.63	10.766	+ .005
503	β Cancri ..	3.76	08 12 36.671	3.2542	- .0041	N. 9 24 31.18	11.007	- .045
507	δ Cancri ..	5.88	08 19 14.564	3.4370	- .0044	N. 18 33 52.64	11.470	- .027
508	ϵ Argus ..	1.74	08 21 02.220	+ 1.2317	- .0051	S. 59 16 38.24	- 11.553	+ .018
509	α Monocerotis	3.95	08 22 03.758	2.9977	- .0054	S. 3 40 13.90	11.670	- .026
512	α Ursæ Majoris	3.47	08 24 17.811	4.9995	- .0187	N. 60 57 38.07	11.912	- .110
511	δ B Ursæ Min.	7.01	08 26 28.768	56.3971	- .0124	N. 88 50 52.85	11.944	+ .012
517	η Cancri ..	5.52	08 28 32.807	3.4711	- .0040	N. 20 41 13.03	12.146	- .045
527	γ Cancri ..	4.73	08 39 07.288	+ 3.4739	- .0083	N. 21 43 42.92	- 12.864	- .039
529	α Pyxidis ..	3.70	08 40 41.833	2.4088	- .0029	S. 32 55 33.20	12.911	+ .020
531	δ Argus m. ..	2.01	08 42 42.886	+ 1.6554	+ .0004	S. 54 26 38.44	- 13.138	- .073

No. 411. *Sirus*. $-1^m.58-8^m.44, 10^\circ, 50^\circ$.No. 426. $9^m, 8'', 161^\circ$.No. 428. $3^m.7$ to $4^m.1, 8^m, 95'', 350^\circ$.No. 447. $8^m.5, 7'', 210^\circ$.No. 457. $8^m, 23'', 73^\circ$.No. 458. *Castor*. $1^m.99-2^m.85, 4'', 210^\circ$.No. 466. *Procyon*. $0^m.5-1^m.5, 3'', 230^\circ$.No. 470. *Pollux*.No. 498. $4^m.79, 41'', 220^\circ$.No. 531. $2^m.1-5^m.2, 3'', 165^\circ, 10^m, 70'', 60^\circ$.

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Cata- logue No.	Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
532	ϵ Hydræ m. . .	3.53	^h 08 ^m 42 ^s 57.839	+ 3.1779	— .0136	N. 6 41 02.41	— 13.131	— .050
539	ζ Hydræ . .	3.30	08 51 35.305	3.1720	— .0076	N. 6 13 14.11	13.630	+ .014
542	ι Ursæ Majoris	3.12	08 54 17.174	4.1156	— .0449	N. 48 19 32.28	14.054	— .238
543	α Cancrî . .	4.27	08 54 33.027	3.2820	+ .0012	N. 12 08 15.06	13.863	— .031
556	κ Cancrî . .	5.14	09 03 50.907	3.2504	— .0023	N. 10 57 32.31	14.417	— .007
559	ξ Cancrî . .	5.22	09 05 13.301	+ 3.4512	— .0009	N. 22 20 15.61	— 14.490	+ .003
560	λ Argus . .	2.22	09 05 20.748	2.2049	— .0033	S. 43 08 28.10	14.485	+ .015
566	β Argus . .	1.80	09 12 25.058	0.6664	— .0298	S. 69 25 13.50	14.818	+ .103
569	δ 83 Cancrî	6.60	09 14 57.876	3.3503	— .0091	N. 18 00 41.41	15.202	— .134
570	ι Argus . .	2.25	09 15 09.785	1.6062	— .0030	S. 58 58 21.47	15.070	+ .009
571	α 40 Lyncis . .	3.30	09 16 40.418	+ 3.6592	— .0186	N. 34 41 52.94	— 15.150	+ .016
572	θ Pyxidîs . .	4.93	09 18 18.221	2.6545	— .0021	S. 25 39 29.64	15.268	— .009
573	κ Argus . .	2.63	09 19 52.960	1.8565	— .0024	S. 54 42 09.23	15.337	+ .011
576	α Hydræ . .	2.16	09 24 02.935	2.9479	— .0017	S. 8 20 44.54	15.546	+ .034
580	ψ Argus m. . .	3.64	09 27 51.724	2.3609	— .0174	S. 40 09 02.81	15.713	+ .075
581	θ Ursæ Majoris	3.26	09 28 03.113	+ 4.0221	— .1038	N. 52 00 23.42	— 16.340	— .543
583	ξ Leonis . .	5.12	09 28 03.976	3.2349	— .0071	N. 11 37 10.47	15.877	— .079
584	N Velorum . .	3.04	09 29 01.943	1.8211	— .0058	S. 56 42 58.34	15.847	+ .004
593	κ Hydræ . .	4.96	09 36 51.198	2.8751	— .0028	S. 14 00 17.79	16.282	— .022
594	σ Leonis . .	3.76	09 37 18.542	3.2028	— .0105	N. 10 13 14.56	16.318	— .055
597	ϵ Leonis . .	3.12	09 41 46.041	+ 3.4080	— .0041	N. 24 06 23.81	— 16.520	— .013
603	μ Leonis . .	4.10	09 48 40.337	3.4150	— .0166	N. 26 20 48.73	16.897	— .054
612	π Leonis . .	4.89	09 56 24.568	3.1712	— .0029	N. 8 23 25.45	17.221	— .021
617	α Leonis . .	1.34	10 04 32.337	3.1959	— .0178	N. 12 19 11.34	17.548	+ .007
619	η Velorum . .	4.09	10 11 42.601	2.5150	— .0148	S. 41 45 52.78	17.803	+ .045
624	α 22 Sextantis . .	5.40	10 14 03.082	+ 2.9809	— .0113	S. 7 42 31.21	— 17.929	+ .012
625	η Carinæ . .	3.44	10 14 40.607	2.0026	— .0022	S. 60 58 19.62	17.959	+ .006
627	γ^1 Leonis . .	2.61	10 16 00.321	3.3094	+ .0209	N. 20 12 22.69	18.170	— .154
628	μ Ursæ Majoris	3.21	10 18 02.784	3.5803	— .0078	N. 41 51 44.06	18.066	+ .028
633	μ Hydræ . .	4.06	10 22 36.386	2.9004	— .0096	S. 16 28 05.43	18.340	— .078
636	α Antliæ . .	4.42	10 23 51.239	+ 2.7424	— .0073	S. 30 42 01.77	— 18.285	+ .022
641	ρ Leonis . .	3.85	10 29 01.253	+ 3.1597	— .0013	N. 9 40 39.51	18.488	— .002
649	ι 0 G Octantis . .	6.74	10 35 25.542	— 3.3668	— .0020	S. 85 43 04.95	18.692	+ .003
654	α 34 Sextantis	6.63	10 38 54.413	+ 3.0987	— .0062	N. 3 57 35.07	18.780	+ .022
656	θ Argus . .	3.03	10 40 23.022	2.1363	— .0031	S. 64 01 00.37	18.828	+ .019
658	η Argus . .	var.	10 42 15.742	+ 2.3235	— .0004	S. 59 18 20.04	— 18.899	+ .023
660	μ Argus . .	2.86	10 43 40.098	2.5762	+ .0066	S. 49 02 21.20	18.988	— .045
662	ι Leonis . .	5.27	10 45 28.398	3.1541	— .0012	N. 10 55 36.02	19.016	— .022
663	ν Hydræ . .	3.32	10 46 04.219	2.9589	+ .0060	S. 15 48 59.10	18.808	+ .203
668	ι Antliæ . .	4.70	10 53 21.489	2.7924	+ .0056	S. 36 45 00.74	19.326	— .123
672	δ Leonis . .	5.05	10 56 50.526	+ 3.0985	+ .0002	N. 4 00 16.15	— 19.301	— .013
674	β Ursæ Majoris	2.44	10 57 30.499	3.6315	+ .0094	N. 56 46 07.75	19.268	+ .036
675	α Ursæ Majoris	1.95	10 59 17.952	+ 3.7165	— .0181	N. 62 08 24.37	19.413	— .068
676	η Octantis . .	6.26	10 59 51.747	— 0.3898	— .0461	S. 84 12 23.66	19.365	— .007
677	λ Leonis . .	4.66	11 01 18.198	+ 3.0949	— .0238	N. 7 43 32.10	— 19.438	— .047

No. 532. $3^m.8-5^m.3$, $<0''.5$, 15 yrs. 7^m , $3''$, 250° .

No. 542. 9^m , $7''n$.

No. 580. $3^m.8-5^m.8$, $0''.5$, 200°, 30 yrs.

No. 584. *Vierteljahrsschrift* gives $3^m.4$ to $4^m.2$.

No. 617. *Regulus*.

No. 627. $3^m.80$ (γ^2), $4''$, 120° .

No. 658. — 1^m to $7^m.8$.

No. 660. 7^m , $2''$, 70° .

No. 675. *Dubhe*.

MEAN PLACES OF STARS, 1928.

FOR JANUARY 1^d.595

Cat- logue No.	Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
			h m s	s	s	° ' "	"	"
680	μ Ursæ Majoris	3.15	11 05 37.319	+ 3.3788	- .0069	N. 44 53 22.21	- 19.512	- .030
682	β Crateris	4.52	11 08 06.817	2.9482	- .0008	S. 22 25 56.70	19.632	- .099
683	δ Leonis	2.58	11 10 16.868	3.1924	+ .0096	N. 20 55 06.47	19.709	- .134
684	θ Leonis	3.41	11 10 27.780	3.1490	- .0051	N. 15 49 24.22	19.658	- .080
690	δ Crateris	3.82	11 15 44.320	2.9980	- .0091	S. 14 23 19.10	19.467	+ .204
697	τ Leonis	5.18	11 24 14.045	+ 3.0851	+ .0005	N. 3 15 10.72	- 19.813	- .012
701	λ Draconis	4.06	11 27 09.017	3.5818	- .0079	N. 69 43 43.30	19.856	- .017
702	ξ Hydræ	3.72	11 29 27.348	2.9469	- .0173	S. 31 27 32.36	19.907	- .041
704	λ Centauri	3.34	11 32 27.097	2.7584	- .0050	S. 62 37 16.51	19.910	- .010
706	ν Leonis	4.47	11 33 15.676	3.0712	- .0005	S. 0 25 33.82	19.864	+ .044
712	ν Virginis	4.20	11 42 09.487	+ 3.0835	- .0020	N. 6 55 58.53	- 20.169	- .185
717	β Leonis	2.23	11 45 23.267	3.0606	- .0350	N. 14 58 28.50	20.121	- .117
718	β Virginis	3.80	11 46 56.636	3.1246	+ .0489	N. 2 10 14.14	20.280	- .268
719	β Centauri	4.71	11 47 32.288	2.9926	- .0082	S. 44 46 21.97	20.030	- .016
722	γ Ursæ Majoris	2.54	11 50 03.070	3.1628	+ .0099	N. 54 05 42.77	20.012	+ .013
726	π Virginis	4.57	11 57 10.975	+ 3.0741	- .0007	N. 7 00 57.09	- 20.070	- .027
730	σ Virginis	4.24	12 01 32.470	3.0559	- .0155	N. 9 07 58.62	19.992	+ .052
733	δ Centauri	2.88	12 04 37.118	3.1009	- .0045	S. 50 19 17.06	20.054	- .014
735	ϵ Corvi	3.21	12 06 25.071	3.0827	- .0054	S. 22 13 09.37	20.021	+ .015
738	δ Crucis	3.08	12 11 18.637	3.1743	- .0055	S. 58 20 54.02	20.026	- .006
739	δ Ursæ Majoris	3.44	12 11 52.150	+ 2.9760	+ .0114	N. 57 25 57.10	- 20.014	+ .003
740	γ Corvi	2.78	12 12 05.989	3.0829	- .0118	S. 17 08 31.94	19.995	+ .022
742	β Chamaeleontis	4.38	12 14 05.233	3.4797	- .0120	S. 78 54 45.25	19.999	- .008
743	δ Ursæ Min.	6.28	12 14 33.500	0.4566	- .0605	N. 88 05 56.42	19.951	- .053
744	η Virginis	4.00	12 16 13.239	3.0684	- .0049	S. 0 16 00.30	20.013	- .018
748	α^1 Crucis	1.58	12 22 34.759	+ 3.3223	- .0052	S. 62 42 00.67	- 19.968	- .021
755	δ Corvi	3.11	12 26 08.102	3.1015	- .0153	S. 16 06 52.91	20.051	- .137
757	γ Crucis	1.61	12 27 09.614	3.3155	- .0020	S. 56 42 36.33	20.166	- .262
761	β Corvi	2.84	12 30 36.034	3.1479	- .0005	S. 22 59 55.34	19.921	- .055
764	α Muscæ	2.93	12 32 52.222	3.5566	- .0071	S. 68 44 20.33	19.854	- .015
768	γ Centauri m.	2.38	12 37 32.180	+ 3.2992	- .0205	S. 48 33 52.03	- 19.783	- .007
769	γ Virginis m.	2.91	12 38 00.507	3.0383	- .0386	S. 1 03 16.79	19.754	+ .016
770	σ Virginis	4.95	12 38 14.366	3.0360	- .0048	N. 10 37 55.88	19.859	- .092
773	β Muscæ m.	3.26	12 41 50.734	3.6593	- .0056	S. 67 42 51.06	19.730	- .019
775	β Crucis	1.50	12 43 30.059	3.4916	- .0058	S. 59 17 43.24	19.700	- .015
776	γ Virginis	6.66	12 44 11.352	+ 3.0541	- .0010	N. 3 57 56.17	- 19.677	- .004
778	γ Comæ	5.07	12 46 11.545	2.9232	- .0018	N. 27 55 55.82	19.619	- .016
781	μ Virginis	4.91	12 50 36.321	3.1177	- .0023	S. 9 08 53.50	19.575	- .017
782	ϵ Ursæ Majoris	1.68	12 50 51.988	2.6440	+ .0131	N. 56 21 01.77	19.553	- .000
784	δ Virginis	3.66	12 51 58.502	3.0209	- .0321	N. 3 47 18.45	19.584	- .052
786	λ^2 Canum Ven.	2.90	12 52 39.715	+ 2.8081	- .0209	N. 38 42 24.63	- 19.467	+ .051
788	ϵ Virginis	2.95	12 58 35.505	2.9857	- .0194	N. 11 20 45.10	19.367	- .026
792	θ Virginis	4.40	13 06 13.147	3.1042	- .0030	S. 5 09 17.75	19.243	- .029
802	γ Hydræ	3.33	13 15 00.145	3.2576	+ .0042	S. 22 47 31.80	19.032	- .052
803	λ Centauri	2.91	13 16 32.546	+ 3.3661	- .0289	S. 36 19 58.52	- 19.023	- .086

No. 697. $2^m. 92''$, 175° .No. 755. $8^m. 24''$, 214° .No. 773. $3^m. 9-4^m. 2$, $1''$, 355° .No. 717. *Denebola*.No. 768. $5^m. 1-3^m. 1$, $1''$, 335° .No. 786. $5^m. 39$ (12^1), $20''$, 227° .No. 748. $2^m. 09$ (α^2), $5''$, 118° .No. 769. $3^m. 65-3^m. 68$, $6''$, 320° .No. 792. $9^m. 7''$, $344''$; $10^m. 71''$, 300° .

MEAN PLACES OF STARS, 1928.

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FOR JANUARY 1st 1895

No.	Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
805	γ^1 Ursæ Majoris	2.40	13 21 01.741	+ 2.4181	+ .0134	N. 55° 18' 03".30	- 18".832	- .027
806	α Virginis	1.21	13 21 23.788	3.1580	- .0034	S. 10 47 09.53	18.824	- .030
807	β Virginis	5.59	13 22 54.700	3.1664	- .0099	S. 12 20 00.58	18.768	- .021
814	ζ Virginis	3.44	13 31 01.316	3.0553	- .0196	S. 0 13 41.99	18.445	+ .040
819	ϵ Centauri	2.56	13 35 18.819	3.7888	- .0031	S. 53 06 02.72	18.344	- .008
821	m Virginis	5.16	13 37 49.779	+ 3.1467	- .0072	S. 8 20 24.75	- 18.204	+ .042
824	τ Bootis	4.51	13 43 50.383	2.8504	- .0345	N. 17 48 54.16	17.985	+ .037
826	η Ursæ Majoris	1.91	13 44 42.280	2.3651	- .0133	N. 49 40 19.95	17.999	- .011
828	μ Centauri	3.32	13 45 16.243	3.6064	- .0021	S. 42 06 56.35	17.991	- .024
831	ζ Centauri	3.06	13 51 02.266	3.7324	- .0064	S. 46 56 04.00	17.775	- .038
832	η Bootis	2.80	13 51 15.313	+ 2.8556	- .0055	N. 18 45 28.79	- 18.090	- .361
839	τ Virginis	4.34	13 57 58.781	3.0516	+ .0005	N. 1 53 32.47	17.464	- .018
841	β Centauri	0.86	13 58 43.534	4.2166	- .0036	S. 60 01 35.25	17.438	- .023
842	π Hydre	3.48	14 02 15.910	3.4116	+ .0023	S. 26 20 09.83	17.392	- .133
845	α Draconis	3.64	14 02 26.259	1.6229	- .0093	N. 64 43 10.29	17.238	+ .013
843	θ Centauri	2.26	14 02 26.283	+ 3.5244	- .0432	S. 36 00 59.25	- 17.771	- .519
844	η^4 Virginis	6.56	14 02 28.794	3.1747	- .0004	S. 8 32 54.63	17.218	+ .032
849	κ Virginis	4.31	14 09 03.062	3.1977	- .0002	S. 9 56 21.53	16.810	+ .139
852	α Bootis	0.24	14 12 22.553	2.7350	- .0787	N. 19 33 23.84	18.787	- 1.995
860	λ Libræ	6.30	14 19 32.907	3.2252	- .0016	S. 11 23 09.51	16.503	- .061
863	ι Bootis	5.36	14 23 06.317	+ 2.7892	- .0062	N. 19 32 59.45	- 16.239	+ .024
869	ρ Bootis	3.78	14 28 43.551	2.5847	- .0089	N. 30 41 12.19	15.853	+ .117
870	ν Bootis	3.00	14 29 10.684	2.4152	- .0107	N. 38 37 21.14	15.793	+ .153
873	η Centauri	2.65	14 30 55.595	3.8017	- .0035	S. 41 50 32.86	15.880	- .027
875	α Centauri <i>c.g.</i>	0.06	14 34 41.623	4.0608	- .4904	S. 60 32 20.74	14.924	+ .725
877	α Circini	3.42	14 36 40.018	+ 4.8265	- .0288	S. 64 39 46.59	- 15.786	- .245
878	α Lupi	2.89	14 37 07.831	3.9798	- .0209	S. 47 04 48.28	15.532	- .017
885	ϵ Bootis	2.70	14 41 50.480	2.6190	- .0048	N. 27 22 37.18	15.230	+ .020
891	α Libræ	2.90	14 46 53.454	+ 3.3157	- .0079	S. 15 44 36.58	15.027	- .067
896	β Ursæ Minoris	2.24	14 50 53.708	- 0.1941	- .0089	N. 74 26 59.19	14.717	+ .008
899	ξ^2 Libræ	5.63	14 52 51.439	+ 3.2526	- .0001	S. 11 07 12.16	- 14.601	+ .007
901	β Lupi	2.81	14 53 48.396	3.9204	- .0048	S. 42 50 41.77	14.591	- .040
902	κ Centauri	3.35	14 54 28.112	3.8950	- .0025	S. 41 48 58.63	14.534	- .023
906	β Bootis	3.63	14 59 13.950	2.2588	- .0048	N. 40 40 25.83	14.250	- .029
907	γ Scorpii	3.41	14 59 51.013	+ 3.5071	- .0061	S. 25 00 00.06	14.228	- .045
909	γ^7 B Ursæ Min.	7.16	15 00 10.786	- 18.6987	- .0261	N. 87 30 35.80	- 14.140	+ .023
910	ν Bootis	4.67	15 01 21.516	+ 2.5693	- .0145	N. 27 13 39.14	14.097	- .008
914	ζ Lupi	3.50	15 07 06.015	4.2979	- .0135	S. 51 49 35.17	13.796	- .068
915	ι Libræ	4.66	15 08 06.714	3.4158	- .0037	S. 19 31 13.05	13.705	- .042
918	γ Triang Aust.	3.06	15 12 09.667	5.5735	- .0111	S. 68 24 54.58	13.428	- .026
919	δ Bootis	3.54	15 12 35.873	+ 2.4170	+ .0051	N. 33 34 57.22	- 13.490	- .117
920	β Libræ	2.74	15 13 07.722	3.2256	- .0074	S. 9 07 05.77	13.357	- .018
926	α^2 Libræ	6.74	15 19 00.582	+ 3.3436	- .0002	S. 14 52 41.14	12.933	+ .018
928	γ Ursæ Minoris	3.14	15 20 49.568	- 0.1098	- .0057	N. 72 05 24.69	12.813	+ .016
931	ι Draconis	3.47	15 23 19.404	+ 1.3313	- .0024	N. 59 13 03.98	- 12.645	+ .015

No. 805. $3^m.96$ (ζ^2), $15''$, 150° .

No. 806. *Spica*.

No. 839. 9^m , $80''$, 290° .

No. 852. *Arcturus*.

No. 875. $0^m.33-1^m.70$, $8''$, 240° .

No. 877. $8^m.83$, $16''$, 240° .

No. 885. $5^m.12$, $3''$, 330° .

No. 915. 10^m , $58''$, 110° .

MEAN PLACES OF STARS, 1928.

FOR JANUARY 1^d.595

Cata- logue No.	Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
933	32 Libræ ..	5.92	15 24 11.482	+ 3.3803	+ .0003	S. 16° 27' 59".48	- 12.631	- .030
935	ρ Octantis ..	5.66	15 26 25.018	13.5308	+ .0940	S. 84 13 46.89	12.359	+ .090
941	γ Lupi m. ..	2.95	15 30 20.097	3.9909	- .0022	S. 40 55 33.07	12.200	- .021
943	α Coronæ Bor.	2.31	15 31 38.254	2.5387	+ .0079	N. 26 57 21.85	12.180	- .092
951	α Serpentis ..	2.75	15 40 43.140	2.9532	+ .0082	N. 6 39 03.90	11.397	+ .048
955	μ Serpentis ..	3.63	15 45 51.584	+ 3.1290	- .0064	S. 3 12 39.74	- 11.099	- .026
957	ξ Ursæ Minoris	4.34	15 46 35.349	- 2.1817	+ .0044	N. 78 01 00.27	11.024	- .004
958	ε Serpentis ..	3.75	15 47 13.465	+ 2.9889	+ .0078	N. 4 41 36.10	10.909	+ .065
959	β Triang. Aust.	3.04	15 48 46.856	5.2685	- .0289	S. 63 12 36.57	11.257	- .397
963	γ Serpentis ..	3.86	15 53 07.495	2.7695	+ .0203	N. 15 53 43.89	11.824	- 1.286
964	π Scorpii ..	3.00	15 54 29.460	+ 3.6250	- .0020	S. 25 54 28.87	- 10.459	- .023
967	δ Scorpii ..	2.54	15 56 04.280	3.5438	- .0017	S. 22 25 04.80	10.340	- .021
972	β ¹ Scorpi ..	2.90	16 01 14.781	3.4854	- .0010	S. 19 36 34.59	9.946	- .018
983	δ Ophiuchi ..	3.03	16 10 34.175	3.1419	- .0037	S. 3 30 36.55	9.354	- .142
986	γ ² Normæ ..	4.14	16 14 26.657	4.4816	- .0169	S. 49 58 50.05	8.970	- .061
987	ε Ophiuchi ..	3.34	16 14 30.527	+ 3.1724	+ .0050	S. 4 31 05.46	- 8.860	+ .043
989	σ Scorpii ..	3.10	16 16 48.441	3.6429	- .0018	S. 25 25 16.78	8.744	- .020
992	γ Herculis ..	3.79	16 18 44.503	2.6450	- .0043	N. 19 19 16.05	8.526	+ .044
1001	η Draconis ..	2.89	16 23 00.617	0.8078	- .0044	N. 61 40 36.60	8.172	+ .060
1002	α Scorpii ..	1.22	16 24 59.318	3.6753	- .0013	S. 26 16 24.83	8.092	- .018
1005	β Herculis ..	2.81	16 27 07.363	+ 2.5776	- .0079	N. 21 38 43.50	- 7.919	- .016
1006	λ Ophiuchi m.	3.85	16 27 16.777	3.0242	- .0028	N. 2 08 25.47	7.958	- .068
1008	τ Scorpii ..	2.91	16 31 23.751	3.7313	- .0015	S. 28 04 04.86	7.579	- .021
1013	ξ Ophiuchi ..	2.70	16 33 11.478	3.3017	+ .0004	S. 10 25 21.22	7.384	+ .028
1016	24 Scorpii ..	5.04	16 37 24.311	3.4673	- .0023	S. 17 36 14.97	7.068	+ .001
1017	ξ Herculis c.g.	3.00	16 38 34.202	+ 2.2600	- .0381	N. 31 43 56.13	- 6.580	+ .393
1018	η Herculis ..	3.61	16 40 25.519	2.0550	+ .0018	N. 39 03 29.70	6.908	- .088
1019	α Triang. Aust.	1.88	16 41 01.472	6.3362	+ .0042	S. 68 53 52.45	6.809	- .037
1023	ε Scorpi ..	2.36	16 45 29.761	3.8827	- .0496	S. 34 09 50.25	6.649	- .247
1031	ξ Aræ ..	3.06	16 52 39.275	+ 4.9584	- .0020	S. 55 52 41.56	5.834	- .029
1032	ε Ursæ Minoris	4.40	16 53 16.851	- 6.2158	+ .0059	N. 82 09 30.07	- 5.751	+ .002
1034	κ Ophiuchi ..	3.42	16 54 15.490	+ 2.8382	- .0205	N. 9 29 08.81	5.678	- .007
1035	30 Ophiuchi ..	5.00	16 57 15.620	3.1614	- .0041	S. 4 06 57.03	5.487	- .068
1036	ε Herculis ..	3.92	16 57 31.953	2.2936	- .0050	N. 31 01 53.13	5.368	+ .028
1040	η Ophiuchi m.	2.63	17 06 14.783	3.4388	+ .0022	S. 15 38 13.64	4.561	+ .097
1042	ξ Draconis ..	3.22	17 08 34.384	+ 0.1696	- .0040	N. 65 48 11.57	- 4.438	+ .022
1045	α ¹ Herculis ..	var.	17 11 21.759	2.7343	- .0014	N. 14 28 16.62	4.183	+ .039
1046	δ Herculis ..	3.16	17 12 04.331	2.4627	- .0028	N. 24 55 22.69	4.321	- .160
1047	π Herculis ..	3.36	17 12 32.234	2.0880	- .0033	N. 36 53 21.63	4.119	+ .002
1052	θ Ophiuchi ..	3.37	17 17 35.105	3.6825	- .0008	S. 24 55 44.74	3.706	- .018
1055	β Aræ ..	2.80	17 19 18.575	+ 4.9825	- .0015	S. 55 27 49.49	- 3.570	- .029
1060	σ Ophiuchi ..	4.44	17 22 56.404	2.9752	- .0008	N. 4 12 06.22	3.214	+ .013
1063	ν Scorpii ..	2.80	17 25 51.986	4.0776	+ .0002	S. 37 14 23.59	3.002	- .028
1064	α Aræ ..	2.97	17 26 16.343	+ 4.6348	- .0034	S. 49 49 14.84	- 3.008	- .069

No. 941. 3^m.6-3^m.8, 0^s.5±, at times single.
 No. 972. 10^m, 1^s, 94°. 5^m.06 (β²), 13^s, 25°.
 No. 986. 9^m, 42^s, 5°.
 No. 989. 8^m, 21^s, 272°.
 No. 992. 9^m, 41^s, 235°.
 No. 1001. 8^m, 5^s.5, 145°.

No. 1002. Antares. 7^m, 3^s, 273°.
 No. 1006. 4^m.0-6^m.1, 0^s.4, 105° (1925), 304° (1930).
 No. 1017. 3^m.0-6^m.5, 2^s, 50°.
 No. 1040. 3^m.2-3^m.7, 0^s.6, 230°.
 No. 1045. 3^m.1 to 3^m.9. 5^m.39 (α²), 4^s.7, 114°.
 No. 1046. 8^m, 10^s, 210°.

MEAN PLACES OF STARS, 1928.

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FOR JANUARY 1^d.595

	Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
			^h ^m ^s	^s	^s	[°] ['] ["]	["]	["]
1066	λ Scorpii ..	1.71	17 28 43.006	+ 4.0715	- .0008	S. 37 03 10.19	- 2.751	- .024
1067	β Draconis ..	2.99	17 28 48.213	1.3538	- .0027	N. 52 21 14.71	2.706	+ .014
1070	α Ophiuchi ..	2.14	17 31 35.428	2.7834	+ .0072	N. 12 36 40.51	2.703	- .225
1071	θ Scorpii ..	2.04	17 32 08.524	4.3081	+ .0003	S. 42 57 12.96	2.429	+ .001
1075	ε Scorpii ..	2.51	17 37 30.251	4.1478	- .0017	S. 38 59 40.15	1.990	- .026
1079	η Pavonis ..	3.58	17 38 39.745	+ 5.8855	- .0010	S. 64 41 29.88	- 1.918	- .055
1080	β Ophiuchi ..	2.94	17 39 54.838	2.9623	- .0036	N. 4 35 46.03	1.591	+ .164
1081	λ Scorpii ..	3.14	17 42 32.794	4.1941	- .0008	S. 40 06 02.41	1.524	+ .001
1084	η Herculis ..	3.48	17 43 38.319	2.3467	- .0245	N. 27 45 42.68	2.169	- .739
1091	89 Herculis ..	5.48	17 52 30.775	2.4187	- .0010	N. 26 03 37.68	0.642	+ .012
1095	γ Draconis ..	2.42	17 54 55.928	+ 1.3912	- .0023	N. 51 29 48.30	- 0.461	- .018
1096	ν Ophiuchi ..	3.50	17 55 03.690	+ 3.3019	- .0009	S. 9 45 58.09	0.547	- .115
1097	δ Ursæ Minoris	4.44	17 55 26.689	- 19.4923	+ .0137	N. 86 36 49.09	0.347	+ .051
1103	γ Sagittarii ..	3.07	18 01 10.907	+ 3.8535	- .0042	S. 30 25 35.29	- 0.083	- .186
1105	72 Ophiuchi ..	3.73	18 03.56.095	2.8436	- .0045	N. 9 33 08.75	+ 0.431	+ .087
1109	μ Sagittarii ..	4.01	18 09 27.393	+ 3.5872	- .0003	S. 21 04 44.93	+ 0.829	+ .002
1111	η Sagittarii ..	3.16	18 12 45.276	4.0588	- .0117	S. 36 47 05.45	0.955	- .160
1114	δ Sagittarii ..	2.84	18 16 23.046	3.8403	+ .0022	S. 29 51 36.66	1.409	- .023
1116	η Serpentis ..	3.42	18 17 34.984	3.1033	- .0375	S. 2 55 07.65	0.845	- .691
1118	ε Sagittarii ..	1.95	18 19 23.582	3.9819	- .0033	S. 34 25 12.84	1.570	- .124
1120	α Telescopii ..	3.76	18 21 38.135	+ 4.4498	- .0011	S. 46 00 35.07	+ 1.844	- .045
1125	λ Sagittarii ..	2.94	18 23 31.605	3.7020	- .0039	S. 25 27 46.45	1.875	- .179
1134	α Lyrae ..	0.14	18 34 29.970	2.0302	+ .0164	N. 38 42 56.59	3.290	+ .284
1136	† H Scuti ..	4.74	18 38 19.847	3.2848	+ .0003	S. 9 07 21.74	3.341	+ .004
1138	ν Sagittarii ..	3.30	18 41 09.498	3.7481	+ .0034	S. 27 03 58.46	3.584	+ .004
1145	λ Pavonis ..	4.42	18 45 33.062	+ 5.5638	- .0013	S. 62 16 19.90	+ 3.941	- .017
1146	30 Sagittarii ..	6.24	18 46 30.761	3.6052	- .0031	S. 22 14 45.61	4.007	- .033
1147	β Lyrae ..	var.	18 47 25.204	+ 2.2137	- .0008	N. 33 16 41.21	4.116	- .001
1153	λ Ursæ Minoris	6.55	18 49 14.157	- 74.3126	- .1069	N. 89 01 55.60	4.280	+ .006
1150	σ Sagittarii ..	2.14	18 50 48.085	+ 3.7202	+ .0006	S. 26 23 15.16	4.358	- .049
1155	ξ Sagittarii ..	3.61	18 53 26.075	+ 3.5790	+ .0017	S. 21 12 09.69	+ 4.620	- .011
1157	γ Lyrae ..	3.30	18 56 14.921	2.2429	- .0013	N. 32 35 23.30	4.872	+ .002
1158	ε Aquilæ ..	4.21	18 56 21.202	2.7218	- .0045	N. 14 58 09.80	4.810	- .069
1159	ζ Sagittarii m.	2.71	18 58 01.891	3.8171	- .0022	S. 29 59 04.38	5.022	+ .001
1160	ζ Aquilæ ..	3.02	19 02 05.988	2.7565	- .0012	N. 13 45 19.10	5.274	- .091
1162	λ Aquilæ ..	3.55	19 02 25.646	+ 3.1831	- .0021	S. 4 59 30.46	+ 5.307	- .085
1161	τ Sagittarii ..	3.42	19 02 26.738	3.7459	- .0049	S. 27 46 37.61	5.145	- .249
1163	α Coronæ Aust.	4.12	19 04 34.549	4.0830	+ .0066	S. 38 01 05.31	5.474	- .099
1166	π Sagittarii ..	3.02	19 05 28.963	3.5683	- .0003	S. 21 08 22.20	5.615	- .035
1172	ψ Sagittarii ..	4.93	19 11 07.607	3.6796	+ .0030	S. 25 22 55.75	6.099	- .022
1173	δ Draconis ..	3.24	19 12 32.531	+ 0.0176	+ .0159	N. 67 32 05.68	+ 6.332	+ .093
1177	ω Aquilæ ..	5.14	19 14 26.143	2.8152	- .0008	N. 11 27 52.02	6.417	+ .020
1185	δ Aquilæ ..	3.44	19 21 52.062	3.0245	+ .0166	N. 2 58 12.10	7.097	+ .088
1186	59 G Telescopii	5.58	19 22 01.586	+ 4.8287	+ .0030	S. 54 28 14.80	+ 7.016	- .006

No. 1084. 9^m.5, 33", 245°.

No. 1109. 10^m, 17", 258°; 10^m, 49", 312°; 10^m, 50", 115°.

No. 1134. *Vega*.

No. 1147. 3^m.4 to 4^m.1. 7^m, 46", 149°; 9^m, 67", 318°; 9^m, 86", 19°.

No. 1159. 3^m.4-3^m.6, <1", 21 yrs.

No. 1186. 8^m, 69", 250°.

MEAN PLACES OF STARS, 1928.

FOR JANUARY 1^d.595

Catalogue No.	Star's Name	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
			ⁿ ^m ^s	^s	^s	[°] ['] ["]		
1190	δ Vulpeculæ ..	4.63	19 25 42.470	+ 2.4952	- .0102	N. 24 31 05.02	+ 7.217	- .105
1193	β^1 Cygni ..	3.24	19 27 48.982	2.4184	- .0008	N. 27 48 26.68	7.490	- .004
1197	μ Aquilæ ..	4.65	19 30 34.266	2.9300	+ .0135	N. 7 13 29.84	7.568	- .149
1198	δ Sagittarii ..	4.66	19 32 19.651	3.6523	+ .0050	S. 25 02 37.71	7.844	- .015
1203	δ Sagittarii ..	5.45	19 36 35.967	3.4378	+ .0047	S. 16 27 34.11	8.166	- .035
1211	γ Sagittarii ..	5.06	19 42 09.809	+ 3.5005	- .0096	S. 19 56 07.68	+ 8.561	- .081
1213	δ Cygni ..	2.98	19 42 43.397	1.8741	+ .0036	N. 44 57 15.41	8.734	+ .048
1214	γ Aquilæ ..	2.80	19 42 50.164	2.8516	+ .0005	N. 10 26 12.24	8.701	+ .006
1212	δ G Octantis ..	6.32	19 42 51.713	11.1694	+ .0080	S. 81 32 02.85	8.701	+ .004
1207	σ Octantis ..	5.48	19 44 35.122	89.0724	+ .1232	S. 89 11 58.99	8.830	- .003
1218	α Aquilæ ..	0.89	19 47 16.195	+ 2.9264	+ .0356	N. 8 10 37.60	+ 9.435	+ .392
1221	δ Sagittarii ..	4.21	19 50 17.938	4.1432	+ .0016	S. 42 03 31.70	9.342	+ .063
1222	δ Aquilæ ..	3.90	19 51 46.559	2.9464	+ .0023	N. 6 13 32.95	8.918	- .475
1227	γ Sagittarii ..	5.05	19 53 52.086	3.4034	+ .0007	S. 15 41 01.38	9.461	- .093
1231	ϵ Sagittarii ..	4.60	19 58 14.010	3.6909	+ .0024	S. 27 54 40.45	9.913	+ .025
1233	δ Pavonis ..	3.64	20 01 40.791	+ 5.9042	+ .1978	S. 66 22 03.30	+ 9.001	- 1.148
1237	θ Aquilæ ..	3.37	20 07 35.407	3.0953	+ .0019	S. 1 02 10.12	10.602	+ .011
1250	δ Capricorni ..	5.96	20 13 47.719	3.5266	+ .0025	S. 22 02 01.15	11.017	- .032
1251	α^2 Capricorni ..	3.77	20 14 03.659	3.3293	+ .0040	S. 12 46 09.01	11.078	+ .010
1252	β Capricorni ..	3.25	20 16 58.059	3.3717	+ .0026	S. 15 00 35.71	11.286	+ .007
1255	γ Cygni ..	2.32	20 19 38.580	+ 2.1524	- .0002	N. 40 01 31.26	+ 11.471	- .001
1256	α Pavonis ..	2.12	20 19 57.754	4.7572	+ .0007	S. 56 58 02.20	11.413	- .081
1258	δ Capricorni ..	5.06	20 24 45.312	3.4230	- .0014	S. 18 03 09.94	11.822	- .013
1260	δ G Octantis ..	7.08	20 25 43.174	14.6137	+ .0459	S. 84 39 23.13	11.889	- .015
1267	ϵ Delphini ..	3.98	20 29 46.347	2.8656	.0000	N. 11 03 27.43	12.173	- .014
1270	α Indi ..	3.21	20 32 30.655	+ 4.2274	+ .0056	S. 47 32 37.55	+ 12.451	+ .076
1277	α Delphini ..	3.86	20 36 17.572	2.7860	+ .0039	N. 15 39 25.84	12.640	+ .006
1279	β Pavonis ..	3.60	20 38 29.529	5.4295	- .0064	S. 66 27 48.26	12.806	+ .023
1281	α Cygni ..	1.33	20 38 58.539	2.0438	- .0008	N. 45 01 20.42	12.821	+ .005
1284	ϵ Cygni ..	2.64	20 43 17.761	2.4261	+ .0276	N. 33 41 58.99	13.434	+ .330
1287	ϵ Aquarii ..	3.83	20 43 46.772	+ 3.2483	+ .0019	S. 9 45 37.25	+ 13.109	- .027
1293	μ Aquarii ..	4.80	20 48 46.292	3.2367	+ .0025	S. 9 15 15.96	13.440	- .022
1296	β Vulpeculæ ..	5.24	20 51 29.371	2.5559	- .0010	N. 27 46 58.69	13.642	+ .004
1301	γ Microscopii ..	4.71	20 56 52.759	3.6841	+ .0002	S. 32 32 24.91	13.984	+ .005
1305	θ Capricorni ..	4.19	21 01 54.121	3.3742	+ .0056	S. 17 31 11.60	14.239	- .052
1308	δ^1 Cygni ..	5.57	21 03 40.055	+ 2.6889	+ .3528	N. 38 23 40.17	+ 17.655	+ 3.256
1314	ζ Cygni ..	3.40	21 09 52.191	2.5518	- .0009	N. 29 55 51.10	14.720	- .050
1318	α Equulei ..	4.14	21 12 13.475	+ 2.9990	+ .0035	N. 4 56 57.60	14.806	- .080
1321	Groombridge 3548 ..	7.36	21 13 59.340	- 12.4702	+ .0110	N. 86 44.29.84	15.026	+ .014
1323	θ^1 Microscopii ..	4.92	21 16 09.713	+ 3.8443	+ .0069	S. 41 06 53.64	15.135	- .002
1324	α Cephei ..	2.60	21 16 51.661	+ 1.4320	+ .0204	N. 62 16 48.37	+ 15.228	+ .051
1325	δ Capricorni ..	4.30	21 18 14.398	3.3423	+ .0021	S. 17 08 31.49	15.265	+ .010
1327	γ Pavonis ..	4.30	21 20 30.838	4.9852	+ .0156	S. 65 41 35.96	16.180	+ .796
1328	ζ Capricorni ..	3.86	21 22 33.572	+ 3.4276	- .0002	S. 22 43 26.50	+ 15.529	+ .031

No. 1193. $5^m.36$ (β^2), $35''$, 55° .No. 1203. 9^m , $46''$, 42° .No. 1213. 8^m , $1''$, 7.270° .No. 1218. *Allair*.No. 1258. $7^m.5$, $3''$, 170° .No. 1281. *Deneb*.No. 1308. $6^m.28$ (δ^1), $25''$, 135° .

MEAN PLACES OF STARS, 1928.

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FOR JANUARY 1^d 595

Star's Name.	Mag.	Right Ascension.	Annual Variation.	Annual Proper Motion.	Declination.	Annual Variation.	Annual Proper Motion.
1333 β Cephei ..	3.33	21 27 44.251	+ 0.7802	+ .0014	N. 70 14 40.38	+ 15.795	+ .014
1332 η Aquarii ..	3.07	21 27 46.170	3.1587	+ .0009	S. 5 53 19.29	15.784	+ .001
1338 ξ Aquarii ..	4.78	21 33 55.199	3.1946	+ .0074	S. 8 10 40.39	16.091	- .018
1345 ϵ Pegasi ..	2.54	21 40 38.933	2.9458	+ .0013	N. 9 32 39.22	16.462	+ .010
1349 δ Capricorni ..	2.98	21 43 04.144	3.3128	+ .0179	S. 16 27 16.90	16.286	- .286
1356 γ Gruis ..	3.16	21 49 34.502	+ 3.6379	+ .0084	S. 37 42 14.97	+ 16.879	- .006
1357 ι Pegasi ..	5.05	21 49 46.984	2.7267	- .0019	N. 25 35 08.62	16.899	+ .004
1370 α Aquarii ..	3.19	22 02 05.170	3.0815	+ .0009	S. 0 40 12.80	17.450	+ .001
1375 ι Pegasi ..	3.96	22 03 39.380	2.7909	+ .0209	N. 24 59 34.37	17.549	+ .032
1374 α Gruis ..	2.16	22 03 42.232	3.7888	+ .0120	S. 47 18 36.92	17.379	- .140
1381 ζ Cephei ..	3.62	22 08 21.163	+ 2.0789	+ .0011	N. 57 50 45.72	+ 17.730	+ .017
1386 θ Aquarii ..	4.32	22 13 02.119	3.1665	+ .0076	S. 8 08 32.50	17.888	- .013
1387 α Tucanæ ..	2.91	22 13 35.105	4.1269	- .0088	S. 60 37 08.75	17.890	- .032
1391 γ Aquarii ..	3.97	22 17 56.261	3.0989	+ .0084	S. 1 45 02.24	18.109	+ .019
1390 ν Octantis ..	5.74	22 18 22.526	11.9888	- .0360	S. 86 20 08.06	18.175	+ .069
1404 σ Aquarii ..	4.89	22 26 50.287	+ 3.1758	- .0002	S. 11 02 48.88	+ 18.388	- .023
1409 η Aquarii ..	4.13	22 31 39.390	3.0827	+ .0056	S. 0 29 20.56	18.528	- .046
1410 ϵ Aquarii ..	5.33	22 34 01.684	3.1077	- .0046	S. 4 35 59.61	18.538	- .113
1415 ζ Pegasi ..	3.61	22 37 52.173	2.9911	+ .0047	N. 10 27 18.47	18.769	- .002
1416 β Gruis ..	2.24	22 38 22.595	3.5908	+ .0137	S. 47 15 41.61	18.783	- .003
1418 η Pegasi ..	3.10	22 39 37.400	+ 2.8096	+ .0002	N. 29 50 39.45	+ 18.805	- .019
1421 ϵ Gruis ..	3.69	22 44 12.901	3.6334	+ .0112	S. 51 41 45.03	18.904	- .055
1425 α Pegasi ..	3.67	22 46 31.491	2.8934	+ .0100	N. 24 13 15.79	18.988	- .035
1428 λ Aquarii ..	3.84	22 48 51.523	3.1309	+ .0001	S. 7 57 47.09	19.131	+ .044
1430 δ Aquarii ..	3.51	22 50 49.869	3.1855	- .0028	S. 16 12 14.77	19.121	- .018
1431 α Piscis Aust.	1.29	22 53 40.556	+ 3.3180	+ .0249	S. 30 00 15.01	+ 19.052	- .159
1436 β Piscium ..	4.58	23 00 12.700	3.0523	+ .0001	N. 3 25 55.68	19.366	.000
1437 β Pegasi ..	2.61	23 00 16.793	2.9056	+ .0134	N. 27 41 31.22	19.515	+ .147
1438 α Pegasi ..	2.57	23 01 10.322	2.9867	+ .0036	N. 14 49 03.27	19.353	- .035
1444 ϵ^2 Aquarii ..	3.80	23 05 36.609	3.2009	+ .0039	S. 21 33 48.44	19.524	+ .041
1452 γ Tucanæ ..	4.10	23 13 14.347	+ 3.5135	- .0035	S. 58 37 50.28	+ 19.723	+ .094
1453 γ Piscium ..	3.85	23 13 25.918	3.1095	+ .0503	N. 2 53 19.34	19.662	+ .029
1455 η^2 Aquarii ..	5.16	23 15 12.990	3.1211	+ .0025	S. 10 00 16.12	19.675	+ .012
1457 τ Pegasi ..	4.65	23 17 04.175	2.9666	+ .0012	N. 23 20 45.90	19.693	- .001
1464 κ Piscium ..	4.94	23 23 14.435	+ 3.0749	+ .0053	N. 0 51 40.69	19.701	- .086
1468 γ H Cephei ..	5.62	23 27 42.494	- 0.3084	+ .0955	N. 86 54 37.29	+ 19.865	+ .020
1474 ι Phœnicis ..	4.80	23 31 12.513	+ 3.2336	+ .0045	S. 43 00 47.84	19.894	+ .007
1479 ι Piscium ..	4.28	23 36 14.726	3.0848	+ .0246	N. 5 14 09.56	19.509	- .428
1480 γ Cephei ..	3.42	23 36 22.437	2.4442	- .0218	N. 77 13 49.55	20.091	+ .153
1482 λ Piscium ..	4.61	23 38 22.289	3.0605	- .0093	N. 1 23 01.65	19.814	- .141
1488 δ Sculptoris ..	4.64	23 45 10.702	+ 3.1275	+ .0077	S. 28 31 42.24	+ 19.909	- .094
1491 ρ Pegasi ..	5.23	23 48 49.298	3.0501	- .0006	N. 18 43 13.72	19.993	- .027
1498 γ Piscium ..	5.07	23 54 59.193	3.0713	- .0036	S. 3 57 19.49	19.974	- .066
1500 ω Piscium ..	4.03	23 55 36.725	+ 3.0797	+ .0097	N. 6 27 53.09	+ 19.936	- .105

No. 1333. 8^m, 13^s, 250°.
No. 1418. 9^m, 91^s, 339°.

No. 1431. *Fomalhaut*.
No. 1438. *Markab*.

No. 1498. 10^m, 2^s, 270°.

APPARENT PLACES OF STARS, 1928.

BESSEL'S DAY NUMBERS.

oh	Log. A.	Log. B.	Log. C.	Log. D.	A'.	B'.
Jan.						
1	— 9.5130	— 0.1826	— 0.4839	+ 1.3053	— .0026	— .087
2	9.5080	0.1868	0.5284	1.3040	— .0041	— .056
3	9.5030	0.1912	0.5688	1.3025	— .0045	— .013
4	9.4979	0.1958	0.6055	1.3009	— .0040	+ .033
5	9.4928	0.2006	0.6392	1.2991	— .0024	+ .071
6	— 9.4877	— 0.2055	— 0.6704	+ 1.2972	— .0002	+ .091
7	9.4825	0.2103	0.6993	1.2951	+ .0021	+ .089
8	9.4773	0.2152	0.7263	1.2929	+ .0040	+ .068
9	9.4721	0.2202	0.7516	1.2906	+ .0051	+ .034
10	9.4668	0.2254	0.7754	1.2881	+ .0053	— .005
11	— 9.4615	— 0.2308	— 0.7978	+ 1.2854	+ .0046	— .042
12	9.4561	0.2363	0.8190	1.2826	+ .0033	— .070
13	9.4507	0.2419	0.8391	1.2796	+ .0015	— .084
14	9.4453	0.2476	0.8581	1.2765	— .0004	— .082
15	9.4398	0.2532	0.8762	1.2732	— .0022	— .067
16	— 9.4343	— 0.2588	— 0.8935	+ 1.2697	— .0036	— .041
17	9.4288	0.2644	0.9100	1.2661	— .0043	— .007
18	9.4233	0.2700	0.9257	1.2623	— .0043	+ .030
19	9.4177	0.2755	0.9407	1.2583	— .0036	+ .061
20	9.4121	0.2811	0.9551	1.2542	— .0023	+ .083
21	— 9.4064	— 0.2868	— 0.9689	+ 1.2499	— .0005	+ .092
22	9.4008	0.2925	0.9822	1.2454	+ .0013	+ .081
23	9.3951	0.2982	0.9949	1.2407	+ .0028	+ .052
24	9.3894	0.3038	1.0071	1.2358	+ .0036	+ .009
25	9.3837	0.3094	1.0189	1.2308	+ .0034	— .036
26	— 9.3779	— 0.3150	— 1.0302	+ 1.2255	+ .0022	— .074
27	9.3721	0.3207	1.0410	1.2201	+ .0004	— .095
28	9.3663	0.3262	1.0515	1.2144	— .0017	— .093
29	9.3605	0.3317	1.0616	1.2085	— .0034	— .070
30	9.3547	0.3373	1.0713	1.2024	— .0043	— .029
31	— 9.3488	— 0.3428	— 1.0807	+ 1.1961	— .0041	+ .018
Feb.						
1	9.3430	0.3483	1.0898	1.1896	— .0029	+ .059
2	9.3371	0.3537	1.0985	1.1828	— .0009	+ .086
3	9.3312	0.3591	1.1069	1.1758	+ .0013	+ .092
4	9.3253	0.3644	1.1150	1.1685	+ .0034	+ .077
5	— 9.3193	— 0.3696	— 1.1229	+ 1.1609	+ .0048	+ .046
6	9.3134	0.3748	1.1304	1.1531	+ .0052	+ .006
7	9.3074	0.3799	1.1377	1.1450	+ .0048	— .032
8	9.3014	0.3849	1.1447	1.1367	+ .0036	— .063
9	9.2955	0.3899	1.1515	1.1280	+ .0019	— .082
10	— 9.2895	— 0.3947	— 1.1581	+ 1.1190	.0000	— .085
11	9.2834	0.3994	1.1644	1.1097	— .0018	— .074
12	9.2774	0.4041	1.1705	1.1000	— .0033	— .050
13	9.2714	0.4087	1.1764	1.0900	— .0042	— .018
14	9.2653	0.4132	1.1820	1.0796	— .0045	+ .019
15	— 9.2593	— 0.4176	— 1.1875	+ 1.0689	— .0040	+ .054
16	— 9.2532	— 0.4219	— 1.1927	+ 1.0577	— .0029	+ .080

APPARENT PLACES OF STARS, 1928.

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BESSEL'S DAY NUMBERS.

c ^b		Log. A.	Log. B.	Log. C.	Log. D.	A'.	B'.
Feb.	16	— 9·2532	— 0·4219	— 1·1927	+ 1·0577	— ·0029	+ ·080
	17	9·2471	0·4262	1·1978	1·0461	— ·0012	+ ·093
	18	9·2410	0·4304	1·2026	1·0340	+ ·0006	+ ·087
	19	9·2348	0·4345	1·2073	1·0215	+ ·0022	+ ·063
	20	9·2287	0·4385	1·2118	1·0084	+ ·0033	+ ·023
	21	— 9·2225	— 0·4424	— 1·2161	+ 0·9948	+ ·0034	— ·022
	22	9·2163	0·4462	1·2202	0·9807	+ ·0026	— ·064
	23	9·2101	0·4499	1·2241	0·9659	+ ·0011	— ·091
	24	9·2039	0·4535	1·2279	0·9505	— ·0009	— ·098
	25	9·1977	0·4570	1·2315	0·9344	— ·0027	— ·080
	26	— 9·1914	— 0·4604	— 1·2350	+ 0·9176	— ·0039	— ·040
	27	9·1851	0·4637	1·2382	0·8999	— ·0040	+ ·003
	28	9·1788	0·4669	1·2414	0·8813	— ·0032	+ ·047
	29	9·1724	0·4701	1·2444	0·8618	— ·0014	+ ·080
Mar.	1	9·1660	0·4731	1·2472	0·8413	+ ·0008	+ ·093
	2	— 9·1596	— 0·4761	— 1·2498	+ 0·8196	+ ·0030	+ ·086
	3	9·1532	0·4789	1·2524	0·7967	+ ·0045	+ ·059
	4	9·1467	0·4817	1·2547	0·7723	+ ·0053	+ ·020
	5	9·1402	0·4843	1·2569	0·7463	+ ·0051	— ·021
	6	9·1336	0·4869	1·2590	0·7186	— ·0041	— ·056
	7	— 9·1269	— 0·4893	— 1·2609	+ 0·6889	— ·0025	— ·079
	8	9·1202	0·4915	1·2627	0·6568	— ·0006	— ·087
	9	9·1134	0·4937	1·2644	0·6221	— ·0013	— ·079
	10	9·1065	0·4959	1·2659	0·5842	— ·0029	— ·059
	11	9·0996	0·4980	1·2673	0·5425	— ·0040	— ·028
	12	— 9·0926	— 0·4999	— 1·2685	+ 0·4963	— ·0044	+ ·007
	13	9·0855	0·5017	1·2696	0·4445	— ·0043	+ ·043
	14	9·0784	0·5035	1·2706	0·3856	— ·0034	+ ·074
	15	9·0711	0·5052	1·2714	0·3172	— ·0019	+ ·091
	16	9·0638	0·5066	1·2721	0·2359	— ·0002	+ ·091
	17	— 9·0563	— 0·5080	— 1·2727	+ 0·1358	+ ·0015	+ ·073
	18	9·0487	0·5093	1·2732	0·0052	+ ·0027	+ ·038
	19	9·0410	0·5106	1·2735	9·8176	+ ·0032	— ·006
	20	9·0332	0·5119	1·2736	+ 9·4801	+ ·0027	— ·051
	21	9·0252	0·5130	1·2737	— 8·7226	+ ·0014	— ·085
	22	— 9·0170	— 0·5140	— 1·2736	— 9·6101	— ·0004	— ·098
	23	9·0087	0·5148	1·2734	9·8818	— ·0023	— ·089
	24	9·0002	0·5156	1·2730	0·0476	— ·0036	— ·058
	25	8·9915	0·5164	1·2726	0·1670	— ·0041	— ·013
	26	8·9827	0·5171	1·2720	0·2605	— ·0034	+ ·034
	27	— 8·9737	— 0·5177	— 1·2712	— 0·3372	— ·0018	+ ·072
	28	8·9644	0·5182	1·2704	0·4022	+ ·0003	+ ·092
	29	8·9548	0·5185	1·2694	0·4586	+ ·0026	+ ·091
	30	8·9450	0·5187	1·2683	0·5083	+ ·0044	+ ·070
	31	8·9349	0·5189	1·2670	0·5528	+ ·0054	+ ·034
Apr.	1	— 8·9245	— 0·5190	— 1·2656	— 0·5930	+ ·0055	— ·008
	2	— 8·9138	— 0·5190	— 1·2641	— 0·6297	+ ·0047	— ·046

BESSEL'S DAY NUMBERS.

c ^h		Log. A.	Log. B.	Log. C.	Log. D.	A'.	B'.
Apr.	2	- 8.9138	- 0.5190	- 1.2641	- 0.6297	+ .0047	- .046
	3	8.9028	0.5190	1.2624	0.6634	+ .0032	- .075
	4	8.8915	0.5190	1.2606	0.6945	+ .0013	- .088
	5	8.8797	0.5188	1.2587	0.7234	- .0006	- .085
	6	8.8676	0.5185	1.2566	0.7503	- .0024	- .068
	7	- 8.8549	- 0.5182	- 1.2544	- 0.7756	- .0037	- .038
	8	8.8417	0.5178	1.2521	0.7993	- .0043	- .003
	9	8.8280	0.5173	1.2496	0.8217	- .0043	+ .033
	10	8.8138	0.5166	1.2470	0.8428	- .0037	+ .066
	11	8.7990	0.5160	1.2442	0.8628	- .0024	+ .089
	12	- 8.7835	- 0.5155	- 1.2413	- 0.8818	- .0008	+ .094
	13	8.7672	0.5148	1.2383	0.8999	+ .0009	+ .082
	14	8.7502	0.5140	1.2351	0.9172	+ .0022	+ .052
	15	8.7323	0.5132	1.2317	0.9336	+ .0029	+ .008
	16	8.7134	0.5124	1.2282	0.9493	+ .0026	- .038
	17	- 8.6935	- 0.5114	- 1.2245	- 0.9644	+ .0015	- .078
	18	8.6723	0.5103	1.2207	0.9788	- .0002	- .100
	19	8.6498	0.5093	1.2168	0.9926	- .0021	- .098
	20	8.6259	0.5082	1.2126	1.0058	- .0036	- .073
	21	8.6003	0.5071	1.2083	1.0185	- .0043	- .031
	22	- 8.5730	- 0.5060	- 1.2039	- 1.0308	- .0039	+ .019
	23	8.5435	0.5048	1.1992	1.0426	- .0025	+ .064
	24	8.5112	0.5036	1.1944	1.0539	- .0004	+ .092
	25	8.4761	0.5024	1.1894	1.0648	+ .0020	+ .099
	26	8.4374	0.5011	1.1843	1.0753	+ .0040	+ .082
May	27	- 8.3945	- 0.4997	- 1.1789	- 1.0854	+ .0054	+ .048
	28	8.3464	0.4983	1.1733	1.0952	+ .0059	+ .005
	29	8.2916	0.4969	1.1676	1.1047	+ .0053	- .037
	30	8.2284	0.4955	1.1617	1.1138	+ .0040	- .068
	1	8.1535	0.4940	1.1555	1.1226	+ .0021	- .085
	2	- 8.0618	- 0.4926	- 1.1492	- 1.1311	+ .0001	- .083
	3	7.9440	0.4910	1.1426	1.1393	- .0017	- .073
	4	7.7796	0.4895	1.1358	1.1472	- .0031	- .046
	5	7.5079	0.4880	1.1287	1.1549	- .0040	- .014
	6	- 6.5798	0.4866	1.1215	1.1623	- .0042	+ .023
	7	+ 7.3927	- 0.4851	- 1.1140	- 1.1694	- .0037	+ .058
	8	7.7184	0.4836	1.1062	1.1763	- .0026	+ .083
	9	7.9170	0.4822	1.0981	1.1830	- .0011	+ .095
	10	8.0492	0.4808	1.0898	1.1895	+ .0005	+ .088
	11	8.1514	0.4794	1.0812	1.1957	+ .0019	+ .063
	12	+ 8.2348	- 0.4780	- 1.0723	- 1.2018	+ .0028	+ .023
	13	8.3049	0.4765	1.0631	1.2076	+ .0028	- .024
	14	8.3659	0.4751	1.0536	1.2132	+ .0018	- .067
	15	8.4200	0.4737	1.0438	1.2186	+ .0002	- .096
	16	8.4684	0.4724	1.0336	1.2239	- .0018	- .102
	17	+ 8.5123	- 0.4711	- 1.0230	- 1.2289	- .0036	- .083
	18	+ 8.5526	- 0.4697	- 1.0120	- 1.2338	- .0046	- .046

APPARENT PLACES OF STARS, 1928.

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BESSEL'S DAY NUMBERS.

c ^h		Log. A.	Log. B.	Log. C.	Log. D.	A'.	B'.
May	18	+ 8.5526	- 0.4697	- 1.0120	- 1.2338	- .0046	- .046
	19	8.5897	0.4684	1.0007	1.2385	- .0047	+ .002
	20	8.6242	0.4672	0.9889	1.2430	- .0036	+ .048
	21	8.6562	0.4660	0.9766	1.2473	- .0015	+ .086
	22	8.6863	0.4648	0.9639	1.2515	+ .0010	+ .099
	23	+ 8.7146	- 0.4637	- 0.9507	- 1.2555	+ .0033	+ .089
	24	8.7412	0.4628	0.9369	1.2594	+ .0051	+ .060
	25	8.7666	0.4618	0.9226	1.2631	+ .0059	+ .020
	26	8.7908	0.4609	0.9077	1.2666	+ .0058	- .023
	27	8.8138	0.4600	0.8921	1.2700	+ .0047	- .061
June	28	+ 8.8358	- 0.4592	- 0.8758	- 1.2733	+ .0030	- .084
	29	8.8569	0.4584	0.8588	1.2764	+ .0010	- .090
	30	8.8770	0.4576	0.8409	1.2793	- .0010	- .081
	31	8.8964	0.4570	0.8221	1.2821	- .0025	- .058
	1	8.9150	0.4565	0.8024	1.2848	- .0036	- .024
	2	+ 8.9330	- 0.4561	- 0.7818	- 1.2873	- .0040	+ .012
	3	8.9503	0.4557	0.7597	1.2897	- .0037	+ .048
	4	8.9670	0.4553	0.7365	1.2920	- .0028	+ .078
	5	8.9832	0.4549	0.7119	1.2941	- .0014	+ .093
	6	8.9988	0.4546	0.6856	1.2961	+ .0003	+ .091
	7	+ 9.0140	- 0.4545	- 0.6575	- 1.2980	+ .0018	+ .072
	8	9.0287	0.4545	0.6274	1.2998	+ .0028	+ .037
	9	9.0430	0.4547	0.5949	1.3014	+ .0030	- .009
	10	9.0568	0.4550	0.5596	1.3029	+ .0023	- .053
	11	9.0703	0.4552	0.5211	1.3042	+ .0008	- .088
	12	+ 9.0834	- 0.4555	- 0.4787	- 1.3055	- .0012	- .103
	13	9.0962	0.4559	0.4315	1.3066	- .0032	- .092
	14	9.1086	0.4565	0.3786	1.3076	- .0047	- .061
	15	9.1206	0.4571	0.3181	1.3084	- .0051	- .016
	16	9.1324	0.4578	0.2476	1.3092	- .0044	+ .035
	17	+ 9.1439	- 0.4586	- 0.1633	- 1.3098	- .0027	+ .077
	18	9.1551	0.4594	0.0586	1.3103	- .0023	+ .097
	19	9.1660	0.4603	9.9201	1.3107	+ .0022	+ .095
	20	9.1766	0.4613	9.7154	1.3110	+ .0043	+ .072
	21	9.1870	0.4624	- 9.3149	1.3111	+ .0056	+ .034
	22	+ 9.1971	- 0.4637	+ 9.0261	- 1.3111	+ .0058	- .011
	23	9.2071	0.4650	9.6220	1.3110	+ .0050	- .050
	24	9.2168	0.4663	9.8640	1.3108	+ .0036	- .078
	25	9.2263	0.4676	0.0185	1.3105	+ .0016	- .090
	26	9.2355	0.4691	0.1320	1.3100	- .0003	- .086
July	27	+ 9.2446	- 0.4708	+ 0.2219	- 1.3094	- .0020	- .066
	28	9.2535	0.4725	0.2962	1.3087	- .0032	- .035
	29	9.2621	0.4742	0.3595	1.3079	- .0038	+ .002
	30	9.2706	0.4760	0.4146	1.3069	- .0037	+ .038
	1	9.2789	0.4780	0.4634	1.3059	- .0030	+ .070
	2	+ 9.2870	- 0.4800	+ 0.5072	- 1.3047	- .0016	+ .090
	3	+ 9.2950	- 0.4820	+ 0.5468	- 1.3033	.0000	+ .094

APPARENT PLACES OF STARS, 1928.

BESSEL'S DAY NUMBERS.

o ^b		Log. A.	Log. B.	Log. C.	Log. D.	A'.	B'.
July	3	+ 9.2950	- 0.4820	+ 0.5468	- 1.3033	.0000	+ .094
	4	9.3028	0.4841	0.5830	1.3019	+ .0016	+ .080
	5	9.3104	0.4862	0.6163	1.3003	+ .0028	+ .049
	6	9.3179	0.4884	0.6472	1.2986	+ .0034	+ .006
	7	9.3252	0.4908	0.6758	1.2968	+ .0030	- .040
	8	+ 9.3324	- 0.4933	+ 0.7026	- 1.2949	+ .0016	- .078
	9	9.3395	0.4958	0.7278	1.2928	- .0003	- .100
	10	9.3464	0.4983	0.7514	1.2906	- .0024	- .100
	11	9.3531	0.5008	0.7737	1.2882	- .0042	- .074
	12	9.3597	0.5033	0.7948	1.2858	- .0051	- .032
	13	+ 9.3662	- 0.5059	+ 0.8148	- 1.2832	- .0049	+ .020
	14	9.3726	0.5085	0.8338	1.2804	- .0036	+ .064
	15	9.3788	0.5113	0.8520	1.2775	- .0014	+ .094
	16	9.3850	0.5141	0.8692	1.2745	+ .0010	+ .099
	17	9.3910	0.5169	0.8857	1.2713	+ .0033	+ .082
	18	+ 9.3968	- 0.5196	+ 0.9015	- 1.2680	+ .0049	+ .048
	19	9.4026	0.5224	0.9166	1.2645	+ .0055	+ .004
	20	9.4082	0.5254	0.9311	1.2609	+ .0051	- .039
	21	9.4138	0.5283	0.9450	1.2571	+ .0039	- .072
	22	9.4192	0.5312	0.9583	1.2532	+ .0021	- .090
	23	+ 9.4246	- 0.5341	+ 0.9712	- 1.2491	+ .0002	- .090
	24	9.4298	0.5371	0.9835	1.2449	- .0016	- .074
	25	9.4350	0.5401	0.9954	1.2405	- .0029	- .046
	26	9.4400	0.5431	1.0069	1.2359	- .0037	- .009
	27	9.4449	0.5461	1.0180	1.2312	- .0038	+ .028
	28	+ 9.4498	- 0.5490	+ 1.0286	- 1.2263	- .0032	+ .063
	29	9.4545	0.5520	1.0389	1.2212	- .0020	+ .086
	30	9.4592	0.5550	1.0488	1.2159	- .0005	+ .095
	31	9.4638	0.5579	1.0584	1.2104	+ .0012	+ .086
Aug.	1	9.4683	0.5609	1.0677	1.2047	+ .0026	+ .061
	2	+ 9.4727	- 0.5639	+ 1.0767	- 1.1989	+ .0034	+ .021
	3	9.4770	0.5669	1.0854	1.1928	+ .0034	- .025
	4	9.4812	0.5700	1.0937	1.1865	+ .0024	- .068
	5	9.4854	0.5730	1.1018	1.1800	+ .0007	- .097
	6	9.4895	0.5759	1.1097	1.1733	- .0014	- .103
	7	+ 9.4935	- 0.5789	+ 1.1173	- 1.1664	- .0034	- .085
	8	9.4974	0.5818	1.1246	1.1592	- .0046	- .047
	9	9.5013	0.5847	1.1317	1.1517	- .0049	+ .003
	10	9.5051	0.5876	1.1386	1.1440	- .0040	+ .051
	11	9.5088	0.5905	1.1452	1.1360	- .0022	+ .086
	12	+ 9.5125	- 0.5933	+ 1.1516	- 1.1278	+ .0002	+ .101
	13	9.5161	0.5962	1.1579	1.1193	+ .0026	+ .090
	14	9.5196	0.5990	1.1639	1.1105	+ .0044	+ .061
	15	9.5231	0.6018	1.1697	1.1013	+ .0053	+ .019
	16	9.5265	0.6045	1.1753	1.0919	+ .0052	- .026
	17	+ 9.5298	- 0.6072	+ 1.1807	- 1.0821	+ .0041	- .064
	18	+ 9.5331	- 0.6100	+ 1.1860	- 1.0719	+ .0025	- .087

APPARENT PLACES OF STARS, 1928.

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BESSEL'S DAY NUMBERS.

Oh	Log. A.	Log. B.	Log. C.	Log. D.	A'.	B'.
Aug. 18	+ 9.5331	- 0.6100	+ 1.1860	- 1.0719	+ .0025	- .087
19	9.5363	0.6126	1.1910	1.0614	+ .0006	- .091
20	9.5395	0.6151	1.1959	1.0505	- .0012	- .080
21	9.5426	0.6176	1.2006	1.0391	- .0027	- .055
22	9.5457	0.6201	1.2051	1.0274	- .0036	- .020
23	+ 9.5487	- 0.6225	+ 1.2095	- 1.0152	- .0039	+ .018
24	9.5517	0.6249	1.2137	1.0024	- .0035	+ .052
25	9.5546	0.6273	1.2177	0.9892	- .0025	+ .079
26	9.5575	0.6297	1.2216	0.9755	- .0011	+ .094
27	9.5603	0.6320	1.2254	0.9611	+ .0006	+ .090
28	+ 9.5631	- 0.6342	+ 1.2289	- 0.9461	+ .0021	+ .071
29	9.5658	0.6363	1.2324	0.9305	+ .0031	+ .034
30	9.5685	0.6384	1.2357	0.9141	+ .0034	- .011
31	9.5711	0.6405	1.2388	0.8970	+ .0028	- .056
Sept. 1	9.5737	0.6425	1.2418	0.8790	+ .0013	- .089
2	+ 9.5763	- 0.6444	+ 1.2446	- 0.8601	- .0006	- .104
3	9.5789	0.6463	1.2473	0.8402	- .0026	- .094
4	9.5814	0.6481	1.2499	0.8192	- .0041	- .062
5	9.5838	0.6499	1.2523	0.7970	- .0047	- .014
6	9.5863	0.6517	1.2546	0.7734	- .0042	+ .036
7	+ 9.5887	- 0.6534	+ 1.2568	- 0.7483	- .0026	+ .077
8	9.5911	0.6550	1.2588	0.7216	- .0004	+ .098
9	9.5934	0.6566	1.2607	0.6930	+ .0020	+ .097
10	9.5957	0.6581	1.2625	0.6621	+ .0040	- .073
11	9.5980	0.6595	1.2641	0.6288	+ .0052	+ .033
12	+ 9.6003	- 0.6609	+ 1.2656	- 0.5925	+ .0054	- .013
13	9.6026	0.6622	1.2670	0.5528	+ .0046	- .054
14	9.6048	0.6635	1.2682	0.5089	+ .0030	- .082
15	9.6070	0.6646	1.2693	0.4599	+ .0011	- .092
16	9.6092	0.6658	1.2703	0.4045	- .0008	- .086
17	+ 9.6114	- 0.6670	+ 1.2712	- 0.3408	- .0024	- .064
18	9.6135	0.6680	1.2719	0.2659	- .0035	- .030
19	9.6157	0.6689	1.2725	0.1751	- .0039	+ .006
20	9.6178	0.6698	1.2730	0.0600	- .0037	+ .042
21	9.6199	0.6706	1.2734	9.9027	- .0029	+ .072
22	+ 9.6220	- 0.6714	+ 1.2736	- 9.6533	- .0016	+ .091
23	9.6241	0.6721	1.2737	- 9.0017	- .0001	+ .093
24	9.6262	0.6727	1.2737	+ 9.3969	+ .0015	+ .079
25	9.6283	0.6734	1.2735	9.7777	+ .0026	+ .048
26	9.6303	0.6740	1.2732	9.9774	+ .0032	+ .004
27	+ 9.6324	- 0.6745	+ 1.2728	+ 0.1136	+ .0028	- .042
28	9.6344	0.6749	1.2723	0.2172	+ .0016	- .080
29	9.6365	0.6752	1.2716	0.3006	- .0002	- .102
30	9.6385	0.6755	1.2708	0.3705	- .0021	- .100
Oct. 1	9.6405	0.6758	1.2699	0.4307	- .0038	- .075
2	+ 9.6426	- 0.6760	+ 1.2688	+ 0.4834	- .0046	- .032
3	+ 9.6446	- 0.6761	+ 1.2676	+ 0.5303	- .0044	+ .018

BESSEL'S DAY NUMBERS.

oh		Log. A.	Log. B.	Log. C.	Log. D.	A'.	B'.
Oct.	3	+ 9.6446	- 0.6761	÷ 1.2676	+ 0.5303	- .0044	+ .018
	4	9.6466	0.6762	1.2663	0.5726	- .0030	+ .065
	5	9.6487	0.6762	1.2649	0.6110	- .0009	+ .095
	6	9.6507	0.6761	1.2633	0.6462	+ .0016	÷ .101
	7	9.6528	0.6760	1.2616	0.6786	+ .0038	+ .084
	8	+ 9.6548	- 0.6759	+ 1.2597	+ 0.7087	+ .0052	÷ .047
	9	9.6569	0.6757	1.2577	0.7368	+ .0057	+ .002
	10	9.6589	0.6754	1.2556	0.7630	+ .0051	- .042
	11	9.6610	0.6751	1.2533	0.7876	+ .0037	- .076
	12	9.6631	0.6748	1.2509	0.8108	+ .0018	- .092
	13	+ 9.6652	- 0.6744	+ 1.2483	+ 0.8328	- .0002	- .091
	14	9.6673	0.6739	1.2456	0.8535	- .0019	- .073
	15	9.6694	0.6734	1.2427	0.8732	- .0032	- .041
	16	9.6715	0.6728	1.2397	0.8919	- .0039	- .005
	17	9.6736	0.6722	1.2365	0.9097	- .0038	+ .031
	18	+ 9.6757	- 0.6716	+ 1.2332	+ 0.9267	- .0032	+ .064
	19	9.6779	0.6709	1.2297	0.9430	- .0020	+ .086
	20	9.6800	0.6702	1.2260	0.9585	- .0005	+ .094
	21	9.6822	0.6695	1.2222	0.9734	+ .0010	+ .084
	22	9.6844	0.6687	1.2182	0.9877	+ .0022	+ .058
	23	+ 9.6865	- 0.6679	+ 1.2140	+ 1.0014	+ .0029	+ .018
	24	9.6887	0.6670	1.2097	1.0146	+ .0028	- .028
	25	9.6909	0.6661	1.2052	1.0272	+ .0018	- .070
	26	9.6932	0.6652	1.2005	1.0394	+ .0001	- .096
	27	9.6954	0.6642	1.1956	1.0511	- .0018	- .102
	28	+ 9.6977	- 0.6632	+ 1.1906	+ 1.0624	- .0036	- .086
	29	9.6999	0.6622	1.1853	1.0733	- .0047	- .047
	30	9.7022	0.6612	1.1798	1.0838	- .0048	+ .001
	31	9.7045	0.6600	1.1741	1.0939	- .0038	+ .050
Nov.	1	9.7068	0.6589	1.1682	1.1037	- .0017	+ .087
	2	+ 9.7092	- 0.6579	+ 1.1621	+ 1.1131	+ .0008	+ .102
	3	9.7115	0.6568	1.1558	1.1222	+ .0032	+ .092
	4	9.7139	0.6557	1.1492	1.1310	+ .0051	+ .062
	5	9.7162	0.6545	1.1424	1.1395	+ .0059	÷ .018
	6	9.7186	0.6533	1.1354	1.1477	+ .0057	- .029
	7	+ 9.7210	- 0.6521	+ 1.1281	+ 1.1556	+ .0045	- .067
	8	9.7234	0.6510	1.1205	1.1633	+ .0027	- .089
	9	9.7258	0.6498	1.1126	1.1707	+ .0007	- .093
	10	9.7282	0.6487	1.1045	1.1778	- .0012	- .080
	11	9.7307	0.6475	1.0961	1.1847	- .0027	- .053
	12	+ 9.7332	- 0.6463	+ 1.0873	+ 1.1914	- .0036	- .016
	13	9.7356	0.6451	1.0783	1.1978	- .0038	+ .022
	14	9.7381	0.6440	1.0689	1.2040	- .0033	+ .057
	15	9.7406	0.6429	1.0592	1.2100	- .0023	+ .082
	16	9.7431	0.6417	1.0491	1.2158	- .0009	+ .094
	17	+ 9.7456	- 0.6406	+ 1.0386	+ 1.2213	+ .0007	+ .089
	18	+ 9.7481	- 0.6395	+ 1.0277	+ 1.2267	+ .0020	+ .067

APPARENT PLACES OF STARS, 1928.

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BESSEL'S DAY NUMBERS.

Ch		Log. A.	Log. B.	Log. C.	Log. D.	A'.	B'.
Nov.	18	+ 9.7481	- 0.6395	+ 1.0277	+ 1.2267	+ .0020	+ .067
	19	9.7507	0.6384	1.0164	1.2319	+ .0028	+ .030
	20	9.7532	0.6373	1.0046	1.2369	+ .0029	- .014
	21	9.7558	0.6363	0.9924	1.2417	+ .0021	- .057
	22	9.7583	0.6353	0.9797	1.2463	+ .0005	- .090
	23	+ 9.7609	- 0.6344	+ 0.9664	+ 1.2507	- .0015	- .104
	24	9.7634	0.6334	0.9526	1.2549	- .0035	- .094
	25	9.7660	0.6325	0.9382	1.2590	- .0049	- .063
	26	9.7686	0.6316	0.9232	1.2629	- .0054	- .015
	27	9.7711	0.6308	0.9074	1.2667	- .0047	+ .036
Dec.	28	+ 9.7737	- 0.6300	+ 0.8909	+ 1.2702	- .0029	+ .078
	29	9.7763	0.6293	0.8737	1.2736	- .0003	+ .101
	30	9.7789	0.6287	0.8555	1.2769	+ .0023	+ .099
	1	9.7815	0.6281	0.8364	1.2800	+ .0045	+ .074
	2	9.7841	0.6275	0.8163	1.2829	+ .0058	+ .033
	3	+ 9.7867	- 0.6269	+ 0.7951	+ 1.2857	+ .0060	- .015
	4	9.7892	0.6264	0.7726	1.2884	+ .0052	- .055
	5	9.7918	0.6260	0.7488	1.2909	+ .0036	- .084
	6	9.7944	0.6256	0.7234	1.2932	+ .0019	- .095
	7	9.7970	0.6253	0.6963	1.2954	- .0004	- .086
	8	+ 9.7996	- 0.6251	+ 0.6672	+ 1.2974	- .0021	- .062
	9	9.8022	0.6250	0.6358	1.2993	- .0032	- .028
	10	9.8047	0.6249	0.6019	1.3010	- .0036	+ .011
	11	9.8073	0.6247	0.5650	1.3026	- .0033	- .048
	12	9.8098	0.6247	0.5244	1.3041	- .0024	+ .076
	13	+ 9.8124	- 0.6249	+ 0.4795	+ 1.3054	- .0011	+ .092
	14	9.8149	0.6251	0.4292	1.3066	+ .0005	+ .092
	15	9.8175	0.6254	0.3722	1.3077	+ .0018	+ .076
	16	9.8200	0.6257	0.3063	1.3086	+ .0028	+ .044
	17	9.8225	0.6260	0.2285	1.3093	+ .0031	+ .001
	18	+ 9.8250	- 0.6263	+ 0.1335	+ 1.3100	+ .0026	- .043
	19	9.8275	0.6268	0.0116	1.3105	+ .0012	- .081
	20	9.8300	0.6274	9.8411	1.3108	- .0008	- .102
	21	9.8324	0.6280	9.5563	1.3110	- .0029	- .100
	22	9.8349	0.6287	+ 8.4216	1.3111	- .0047	- .075
	23	+ 9.8373	- 0.6295	- 9.4877	+ 1.3111	- .0056	- .032
	24	9.8398	0.6303	9.8069	1.3109	- .0054	+ .019
	25	9.8422	0.6312	9.9889	1.3106	- .0040	+ .067
	26	9.8446	0.6322	0.1166	1.3101	- .0017	+ .096
	27	9.8469	0.6333	0.2151	1.3095	+ .0010	+ .101
	28	+ 9.8493	- 0.6344	- 0.2952	+ 1.3087	+ .0035	+ .086
	29	9.8517	0.6356	0.3627	1.3078	+ .0052	+ .047
	30	9.8540	0.6368	0.4210	1.3068	+ .0059	+ .001
	31	9.8563	0.6382	0.4723	1.3056	+ .0055	- .043
	32	+ 9.8586	- 0.6396	- 0.5180	+ 1.3043	+ .0041	- .078

APPARENT PLACES OF STARS, 1928.

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

o ^h		^s	Log. g	G	Log. h	H	Log. i	i'	g'	G'
Jan.	1	-1.001	0.8265	193 07	1.3102	351 25	-0.1211	-0.008	.102	239
	2	0.990	0.8219	193 24	1.3100	350 28	0.1656	-0.013	.099	214
	3	0.979	0.8174	193 41	1.3098	349 32	0.2060	-0.014	.092	188
	4	0.967	0.8129	193 59	1.3096	348 35	0.2427	-0.012	.086	157
	5	0.956	0.8084	194 17	1.3093	347 39	0.2764	-0.007	.086	124
	6	-0.944	0.8039	194 36	1.3090	346 42	-0.3076	-0.001	.091	92
	7	0.933	0.7994	194 55	1.3087	345 46	0.3365	+0.006	.098	65
	8	0.922	0.7949	195 15	1.3084	344 49	0.3635	+0.012	.105	40
	9	0.911	0.7904	195 36	1.3080	343 53	0.3888	+0.016	.107	18
	10	0.900	0.7859	195 58	1.3076	342 56	0.4126	+0.016	.107	357
	11	-0.889	0.7814	196 21	1.3072	341 59	-0.4350	+0.014	.101	336
	12	0.878	0.7769	196 45	1.3068	341 02	0.4562	+0.010	.096	313
	13	0.867	0.7724	197 09	1.3064	340 04	0.4763	+0.005	.089	290
	14	0.856	0.7680	197 34	1.3060	339 07	0.4953	-0.001	.083	264
	15	0.846	0.7636	197 59	1.3056	338 09	0.5134	-0.007	.080	237
	16	-0.835	0.7592	198 25	1.3051	337 12	-0.5307	-0.011	.082	210
	17	0.825	0.7548	198 52	1.3046	336 14	0.5472	-0.013	.086	185
	18	0.814	0.7504	199 19	1.3041	335 16	0.5629	-0.013	.091	161
	19	0.804	0.7461	199 47	1.3036	334 18	0.5779	-0.011	.096	140
	20	0.793	0.7418	200 16	1.3031	333 20	0.5923	-0.007	.095	119
	21	-0.783	0.7375	200 45	1.3025	332 22	-0.6061	-0.002	.093	96
	22	0.773	0.7333	201 15	1.3020	331 23	0.6194	+0.004	.085	72
	23	0.763	0.7292	201 45	1.3014	330 25	0.6321	+0.009	.077	43
	24	0.753	0.7251	202 16	1.3008	329 26	0.6443	+0.011	.072	7
	25	0.743	0.7210	202 48	1.3002	328 27	0.6561	+0.010	.076	332
	26	-0.733	0.7170	203 21	1.2996	327 28	-0.6674	+0.007	.087	301
	27	0.723	0.7130	203 54	1.2990	326 29	0.6782	+0.001	.095	274
	28	0.714	0.7091	204 28	1.2984	325 30	0.6887	-0.005	.099	250
	29	0.705	0.7053	205 02	1.2978	324 30	0.6988	-0.010	.097	226
	30	0.695	0.7016	205 37	1.2972	323 30	0.7085	-0.013	.091	199
Feb.	31	-0.686	0.6979	206 12	1.2965	322 31	-0.7179	-0.013	.084	168
	1	0.677	0.6943	206 48	1.2959	321 31	0.7270	-0.009	.082	134
	2	0.668	0.6908	207 24	1.2952	320 31	0.7357	-0.003	.088	102
	3	0.659	0.6874	208 01	1.2946	319 31	0.7441	+0.004	.096	74
	4	0.650	0.6840	208 38	1.2939	318 30	0.7522	+0.010	.102	49
	5	-0.641	0.6807	209 15	1.2933	317 30	-0.7601	+0.015	.107	26
	6	0.632	0.6774	209 53	1.2926	316 30	0.7676	+0.016	.105	3
	7	0.623	0.6743	210 31	1.2920	315 29	0.7749	+0.015	.101	342
	8	0.614	0.6712	211 09	1.2913	314 28	0.7819	+0.011	.095	319
	9	0.606	0.6682	211 47	1.2907	313 27	0.7887	+0.006	.090	295
	10	-0.598	0.6652	212 26	1.2900	312 25	-0.7953	.000	.085	271
	11	0.590	0.6623	213 05	1.2894	311 24	0.8016	-0.005	.081	245
	12	0.582	0.6596	213 44	1.2887	310 22	0.8077	-0.010	.083	218
	13	0.574	0.6569	214 23	1.2880	309 20	0.8136	-0.013	.086	192
	14	0.566	0.6542	215 03	1.2873	308 18	0.8192	-0.014	.092	168
	15	-0.558	0.6517	215 42	1.2867	307 16	-0.8247	-0.012	.098	146
	16	-0.550	0.6492	216 21	1.2860	306 14	-0.8299	-0.009	.099	126

APPARENT PLACES OF STARS, 1928.

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QUANTITIES FOR CORRECTING THE PLACES OF STARS.

α	f	Log. g	G	Log. h	H	Log. i	f'	g'	G'
Feb. 16	-0.550	0.6492	216 21	1.2860	306 14	-0.8299	-0.009	.099	126
17	0.542	0.6468	217 00	1.2854	305 12	0.8350	-0.004	.097	105
18	0.535	0.6444	217 39	1.2848	304 09	0.8398	+0.002	.089	82
19	0.528	0.6421	218 18	1.2842	303 06	0.8445	+0.007	.077	55
20	0.520	0.6399	218 58	1.2836	302 03	0.8490	+0.010	.069	19
21	-0.513	0.6378	219 37	1.2830	301 00	-0.8533	+0.011	.072	343
22	0.506	0.6357	220 16	1.2824	299 57	0.8574	+0.008	.084	310
23	0.498	0.6337	220 55	1.2818	298 54	0.8613	+0.003	.094	283
24	0.491	0.6317	221 33	1.2813	297 50	0.8651	-0.003	.100	260
25	0.484	0.6298	222 12	1.2808	296 47	0.8687	-0.008	.097	236
26	-0.477	0.6280	222 50	1.2803	295 43	-0.8722	-0.012	.087	207
27	0.470	0.6262	223 28	1.2798	294 39	0.8755	-0.012	.081	178
28	0.463	0.6244	224 05	1.2793	293 35	0.8786	-0.010	.079	143
29	0.456	0.6227	224 43	1.2788	292 31	0.8816	-0.004	.085	109
Mar. 1	0.450	0.6211	225 20	1.2784	291 26	0.8844	+0.003	.095	80
2	-0.443	0.6195	225 57	1.2779	290 22	-0.8870	+0.009	.105	55
3	0.436	0.6179	226 33	1.2775	289 18	0.8896	+0.014	.108	33
4	0.430	0.6163	227 10	1.2771	288 13	0.8919	+0.016	.107	11
5	0.424	0.6148	227 46	1.2767	287 09	0.8941	+0.016	.103	348
6	0.417	0.6132	228 22	1.2763	286 04	0.8962	+0.013	.099	326
7	-0.411	0.6117	228 57	1.2760	285 00	-0.8981	+0.008	.093	302
8	0.405	0.6101	229 33	1.2757	283 55	0.8999	+0.002	.088	277
9	0.399	0.6086	230 08	1.2754	282 50	0.9016	-0.004	.083	252
10	0.392	0.6070	230 43	1.2751	281 45	0.9031	-0.009	.083	225
11	0.386	0.6055	231 18	1.2748	280 40	0.9045	-0.012	.086	199
12	-0.380	0.6040	231 53	1.2746	279 35	-0.9057	-0.014	.089	175
13	0.374	0.6025	232 27	1.2744	278 30	0.9068	-0.013	.096	153
14	0.368	0.6010	233 01	1.2742	277 25	0.9078	-0.010	.101	133
15	0.362	0.5994	233 34	1.2741	276 20	0.9086	-0.006	.099	113
16	0.356	0.5979	234 08	1.2740	275 15	0.9093	-0.001	.091	92
17	-0.350	0.5963	234 41	1.2739	274 10	-0.9099	+0.005	.079	68
18	0.344	0.5947	235 15	1.2738	273 05	0.9104	+0.008	.067	35
19	0.338	0.5931	235 48	1.2737	272 00	0.9107	+0.010	.064	355
20	0.332	0.5915	236 21	1.2737	270 55	0.9108	+0.008	.074	317
21	0.326	0.5899	236 54	1.2737	269 50	0.9109	+0.004	.089	288
22	-0.320	0.5882	237 27	1.2737	268 45	-0.9108	-0.001	.098	265
23	0.314	0.5865	238 00	1.2737	267 40	0.9106	-0.007	.100	243
24	0.307	0.5847	238 33	1.2738	266 35	0.9102	-0.011	.093	219
25	0.301	0.5829	239 06	1.2739	265 31	0.9098	-0.013	.083	189
26	0.295	0.5811	239 39	1.2740	264 26	0.9092	-0.011	.077	154
27	-0.289	0.5792	240 12	1.2741	263 22	-0.9084	-0.006	.081	117
28	0.283	0.5773	240 45	1.2743	262 17	0.9076	+0.001	.092	85
29	0.277	0.5754	241 18	1.2745	261 13	0.9066	+0.008	.105	60
30	0.271	0.5734	241 51	1.2747	260 09	0.9055	+0.013	.113	39
31	0.265	0.5713	242 25	1.2749	259 04	0.9042	+0.017	.114	17
Apr. 1	-0.259	0.5692	242 59	1.2752	258 00	-0.9028	+0.017	.110	354
2	-0.252	0.5670	243 33	1.2755	256 56	-0.9013	+0.014	.104	334

APPARENT PLACES OF STARS, 1928.

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

ob	<i>f</i>	Log. <i>g</i>	<i>G</i>	Log. <i>h</i>	<i>H</i>	Log. <i>i</i>	<i>f'</i>	<i>g'</i>	<i>G'</i>
Apr. 2	^s -0.252	0.5670	^o 243 33	1.2755	^c 256 56	-0.9013	^s +0.014	["] 1.04	^o 334
3	0.246	0.5649	244 07	1.2758	255 52	0.8996	+0.010	0.98	310
4	0.240	0.5627	244 42	1.2761	254 48	0.8978	+0.004	0.92	287
5	0.234	0.5605	245 17	1.2764	253 44	0.8959	-0.002	0.86	262
6	0.227	0.5582	245 53	1.2767	252 41	0.8938	-0.007	0.83	235
7	-0.221	0.5558	246 29	1.2771	251 38	-0.8916	-0.011	0.83	207
8	0.214	0.5534	247 06	1.2775	250 35	0.8893	-0.013	0.87	182
9	0.207	0.5509	247 43	1.2779	249 32	0.8868	-0.013	0.93	159
10	0.200	0.5484	248 20	1.2784	248 29	0.8842	-0.011	0.99	138
11	0.193	0.5460	248 58	1.2788	247 26	0.8814	-0.007	1.01	118
12	-0.187	0.5435	249 37	1.2793	246 24	-0.8785	-0.002	0.95	99
13	0.180	0.5410	250 17	1.2798	245 21	0.8755	+0.003	0.84	78
14	0.173	0.5385	250 57	1.2803	244 19	0.8723	+0.007	0.69	49
15	0.166	0.5359	251 38	1.2808	243 17	0.8689	+0.009	0.58	8
16	0.159	0.5333	252 20	1.2813	242 15	0.8654	+0.008	0.66	324
17	-0.152	0.5306	253 03	1.2818	241 13	-0.8617	+0.005	0.84	292
18	0.144	0.5280	253 46	1.2823	240 12	0.8579	-0.001	1.00	268
19	0.137	0.5254	254 31	1.2829	239 11	0.8540	-0.006	1.07	247
20	0.130	0.5228	255 16	1.2835	238 10	0.8498	-0.011	1.03	225
21	0.123	0.5202	256 03	1.2841	237 09	0.8455	-0.013	0.91	200
22	-0.115	0.5176	256 50	1.2847	236 08	-0.8411	-0.012	0.81	167
23	0.108	0.5150	257 39	1.2853	235 08	0.8364	-0.008	0.83	129
24	0.100	0.5125	258 28	1.2859	234 07	0.8316	-0.001	0.92	95
25	0.092	0.5100	259 19	1.2865	233 07	0.8266	+0.006	1.06	69
26	0.084	0.5075	260 11	1.2871	232 07	0.8215	+0.012	1.16	45
27	-0.076	0.5050	261 04	1.2877	231 07	-0.8161	+0.017	1.19	23
28	0.068	0.5026	261 58	1.2883	230 08	0.8105	+0.018	1.18	2
29	0.060	0.5003	262 53	1.2889	229 08	0.8048	+0.016	1.13	341
30	0.052	0.4980	263 49	1.2896	228 09	0.7989	+0.012	1.05	320
May 1	0.044	0.4958	264 46	1.2902	227 10	0.7927	+0.007	0.95	297
2	-0.036	0.4937	265 45	1.2908	226 11	-0.7864	0.000	0.88	271
3	0.027	0.4917	266 45	1.2914	225 13	0.7798	-0.005	0.80	245
4	0.018	0.4898	267 46	1.2921	224 15	0.7730	-0.010	0.77	216
5	0.010	0.4881	268 48	1.2927	223 17	0.7659	-0.012	0.82	190
6	-0.001	0.4865	269 51	1.2933	222 19	0.7587	-0.013	0.87	165
7	+0.007	0.4851	270 55	1.2939	221 21	-0.7512	-0.011	0.94	142
8	0.016	0.4839	272 01	1.2946	220 24	0.7434	-0.008	0.99	123
9	0.025	0.4829	273 08	1.2952	219 26	0.7353	-0.003	0.98	103
10	0.034	0.4820	274 15	1.2959	218 28	0.7270	+0.002	0.89	83
11	0.043	0.4813	275 23	1.2965	217 31	0.7184	+0.006	0.74	58
12	+0.053	0.4808	276 32	1.2971	216 35	-0.7095	+0.008	0.60	23
13	0.062	0.4805	277 42	1.2977	215 38	0.7003	+0.008	0.60	336
14	0.071	0.4804	278 52	1.2983	214 42	0.6908	+0.006	0.76	298
15	0.080	0.4805	280 03	1.2989	213 46	0.6810	+0.001	0.96	272
16	0.090	0.4808	281 14	1.2995	212 50	0.6708	-0.005	1.08	251
17	+0.099	0.4814	282 26	1.3001	211 54	-0.6602	-0.011	1.10	229
18	+0.109	0.4822	283 38	1.3007	210 58	-0.6492	-0.014	1.04	207

APPARENT PLACES OF STARS, 1928.

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QUANTITIES FOR CORRECTING THE PLACES OF STARS.

c'	f	Log. g	G	Log. h	H	Log. i	f'	g'	G'
May 18	+0.109	0.4822	283 38	1.3007	210 58	-0.6492	-0.014	.104	207
19	0.119	0.4832	284 51	1.3012	210 02	0.6379	-0.014	.094	179
20	0.129	0.4845	286 03	1.3017	209 07	0.6261	-0.011	.086	146
21	0.139	0.4861	287 15	1.3022	208 12	0.6138	-0.005	.091	110
22	0.149	0.4879	288 27	1.3027	207 17	0.6011	+0.003	.101	79
23	+0.159	0.4899	289 39	1.3032	206 22	-0.5879	+0.010	.110	54
24	0.169	0.4922	290 50	1.3037	205 27	0.5741	+0.016	.117	30
25	0.179	0.4947	292 01	1.3042	204 32	0.5598	+0.018	.121	10
26	0.190	0.4975	293 11	1.3047	203 38	0.5449	+0.018	.117	349
27	0.200	0.5005	294 21	1.3052	202 43	0.5293	+0.014	.112	327
28	+0.211	0.5037	295 30	1.3056	201 49	-0.5130	+0.009	.102	305
29	0.221	0.5071	296 38	1.3060	200 54	0.4960	+0.003	.092	282
30	0.232	0.5108	297 46	1.3064	200 00	0.4781	-0.003	.083	257
31	0.242	0.5146	298 52	1.3068	199 07	0.4593	-0.008	.077	229
June 1	0.253	0.5187	299 57	1.3072	198 14	0.4396	-0.011	.076	198
2	+0.263	0.5230	301 01	1.3076	197 20	-0.4189	-0.012	.081	172
3	0.274	0.5274	302 04	1.3079	196 27	0.3969	-0.011	.088	147
4	0.285	0.5320	303 05	1.3082	195 33	0.3737	-0.008	.095	125
5	0.296	0.5367	304 05	1.3085	194 40	0.3491	-0.004	.097	106
6	0.306	0.5416	305 04	1.3088	193 46	0.3228	+0.001	.091	86
7	+0.317	0.5467	306 01	1.3091	192 53	-0.2945	+0.006	.081	63
8	0.328	0.5519	306 56	1.3094	192 00	0.2646	+0.009	.067	33
9	0.339	0.5572	307 50	1.3096	191 07	0.2321	+0.009	.062	352
10	0.350	0.5625	308 43	1.3098	190 14	0.1968	+0.007	.072	312
11	0.361	0.5680	309 34	1.3100	189 21	0.1583	+0.003	.090	280
12	+0.372	0.5736	310 24	1.3102	188 28	-0.1159	-0.004	.106	257
13	0.383	0.5793	311 12	1.3104	187 36	0.0687	-0.010	.112	235
14	0.394	0.5851	311 59	1.3106	186 43	0.0158	-0.014	.112	213
15	0.405	0.5910	312 44	1.3107	185 50	9.9553	-0.016	.103	189
16	0.417	0.5969	313 28	1.3108	184 57	9.8848	-0.014	.095	158
17	+0.428	0.6028	314 10	1.3109	184 05	-9.8005	-0.008	.094	125
18	0.439	0.6087	314 51	1.3110	183 12	9.6958	-0.001	.097	94
19	0.450	0.6147	315 30	1.3110	182 20	9.5573	+0.007	.104	66
20	0.462	0.6206	316 08	1.3111	181 27	9.3526	+0.013	.112	40
21	0.473	0.6266	316 45	1.3111	180 35	-8.9521	+0.017	.117	17
22	+0.484	0.6325	317 21	1.3111	179 42	+8.6633	+0.018	.116	355
23	0.495	0.6385	317 55	1.3111	178 50	9.2592	+0.015	.113	333
24	0.506	0.6446	318 28	1.3111	177 57	9.5012	+0.011	.105	312
25	0.517	0.6506	318 59	1.3111	177 05	9.6557	+0.005	.095	290
26	0.528	0.6566	319 29	1.3110	176 12	9.7692	-0.001	.086	266
27	+0.539	0.6626	319 58	1.3109	175 20	+9.8591	-0.006	.078	238
28	0.551	0.6685	320 26	1.3108	174 27	9.9334	-0.010	.073	208
29	0.562	0.6743	320 53	1.3106	173 35	9.9967	-0.012	.076	178
30	0.573	0.6802	321 19	1.3105	172 42	0.0518	-0.011	.083	153
July 1	0.584	0.6860	321 44	1.3103	171 50	0.1006	-0.009	.091	130
2	+0.595	0.6918	322 08	1.3101	170 57	+0.1444	-0.005	.095	110
3	+0.606	0.6975	322 30	1.3099	170 04	+0.1840	.000	.094	90

APPARENT PLACES OF STARS, 1928.

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

α^h	f	Log. g	G	Log. h	H	Log. i	f'	g'	G'
July 3	+0.606	0.6975	322 30	1.3099	170 04	+0.1840	+0.000	+0.094	90
4	0.617	0.7032	322 52	1.3096	169 11	0.2202	+0.005	+0.086	69
5	0.628	0.7089	323 13	1.3094	168 18	0.2535	+0.009	+0.074	39
6	0.639	0.7145	323 33	1.3091	167 25	0.2844	+0.010	+0.067	5
7	0.650	0.7200	323 51	1.3089	166 32	0.3130	+0.009	+0.071	326
8	+0.661	0.7256	324 09	1.3086	165 39	+0.3398	+0.005	+0.085	293
9	0.672	0.7311	324 26	1.3083	164 46	0.3650	-0.001	+0.100	267
10	0.683	0.7365	324 42	1.3080	163 53	0.3886	-0.007	+0.111	244
11	0.693	0.7419	324 58	1.3076	163 00	0.4109	-0.013	+0.111	221
12	0.704	0.7472	325 13	1.3073	162 07	0.4320	-0.016	+0.108	197
13	+0.714	0.7524	325 27	1.3069	161 13	+0.4520	-0.015	+0.100	169
14	0.725	0.7576	325 41	1.3065	160 19	0.4710	-0.011	+0.097	138
15	0.735	0.7627	325 54	1.3061	159 25	0.4892	-0.004	+0.099	107
16	0.746	0.7678	326 07	1.3057	158 32	0.5064	+0.003	+0.101	79
17	0.756	0.7728	326 19	1.3053	157 38	0.5229	+0.010	+0.106	51
18	+0.766	0.7777	326 30	1.3048	156 44	+0.5387	+0.015	+0.110	26
19	0.776	0.7826	326 41	1.3043	155 50	0.5538	+0.017	+0.111	2
20	0.787	0.7874	326 51	1.3039	154 56	0.5683	+0.016	+0.110	339
21	0.797	0.7922	327 01	1.3034	154 02	0.5822	+0.012	+0.107	317
22	0.807	0.7969	327 10	1.3029	153 07	0.5955	+0.007	+0.100	296
23	+0.817	0.8015	327 18	1.3024	152 12	+0.6084	+0.000	+0.090	272
24	0.827	0.8061	327 26	1.3019	151 17	0.6207	-0.005	+0.081	246
25	0.837	0.8106	327 34	1.3014	150 22	0.6326	-0.009	+0.075	218
26	0.847	0.8150	327 41	1.3009	149 27	0.6441	-0.011	+0.075	187
27	0.856	0.8194	327 48	1.3003	148 32	0.6552	-0.012	+0.081	159
28	+0.866	0.8237	327 55	1.2997	147 37	+0.6658	-0.010	+0.089	136
29	0.875	0.8280	328 01	1.2991	146 42	0.6761	-0.006	+0.095	116
30	0.885	0.8322	328 07	1.2985	145 46	0.6860	-0.002	+0.096	96
31	0.894	0.8363	328 13	1.2979	144 50	0.6956	+0.003	+0.089	75
Aug. 1	0.904	0.8404	328 18	1.2973	143 54	0.7049	+0.008	+0.080	50
2	+0.913	0.8444	328 23	1.2967	142 58	+0.7139	+0.010	+0.071	17
3	0.922	0.8484	328 28	1.2961	142 01	0.7226	+0.010	+0.071	340
4	0.931	0.8523	328 32	1.2955	141 04	0.7309	+0.007	+0.082	305
5	0.940	0.8561	328 36	1.2949	140 08	0.7390	+0.002	+0.098	278
6	0.949	0.8599	328 40	1.2943	139 11	0.7469	-0.004	+0.107	254
7	+0.958	0.8636	328 44	1.2937	138 14	+0.7545	-0.010	+0.110	231
8	0.966	0.8673	328 47	1.2931	137 17	0.7618	-0.014	+0.104	207
9	0.975	0.8709	328 51	1.2925	136 20	0.7689	-0.015	+0.098	178
10	0.983	0.8745	328 54	1.2919	135 22	0.7758	-0.012	+0.095	147
11	0.992	0.8780	328 57	1.2913	134 24	0.7824	-0.007	+0.096	117
12	+1.000	0.8814	329 00	1.2906	133 26	+0.7888	+0.001	+0.101	88
13	1.009	0.8848	329 03	1.2900	132 28	0.7951	+0.008	+0.103	60
14	1.017	0.8882	329 06	1.2894	131 30	0.8011	+0.013	+0.106	34
15	1.025	0.8915	329 08	1.2888	130 31	0.8069	+0.016	+0.107	10
16	1.033	0.8947	329 10	1.2881	129 32	0.8125	+0.016	+0.107	346
17	+1.041	0.8979	329 12	1.2875	128 33	+0.8179	+0.013	+0.105	322
18	+1.049	0.9010	329 14	1.2869	127 34	+0.8232	+0.008	+0.102	301

APPARENT PLACES OF STARS, 1928.

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QUANTITIES FOR CORRECTING THE PLACES OF STARS.

	α	$\log. g$	G	$\log. h$	H	$\log. i$	f'	g'	G'
Aug. 15	$-1^{\circ}349$	0.9010	329 14	1.2869	127 34	+0.8232	+0.008	.102	301
16	1.056	0.9041	329 16	1.2863	126 35	0.8282	0.002	.092	277
17	1.064	0.9071	329 18	1.2857	125 35	0.8331	-0.003	.084	253
18	1.071	0.9100	329 20	1.2851	124 35	0.8378	-0.008	.076	226
22	1.079	0.9129	329 22	1.2845	123 35	0.8423	-0.011	.075	196
23	+1.086	0.9158	329 24	1.2839	122 35	-0.8467	-0.012	.080	167
24	1.094	0.9186	329 26	1.2833	121 35	0.8509	-0.011	.087	144
25	1.101	0.9214	329 28	1.2827	120 35	0.8549	-0.008	.094	123
26	1.109	0.9241	329 30	1.2821	119 34	0.8588	-0.003	.097	103
27	1.116	0.9268	329 32	1.2816	118 33	0.8626	+0.002	.091	83
28	+1.124	0.9295	329 34	1.2811	117 32	-0.8661	-0.006	.083	59
29	1.131	0.9321	329 36	1.2806	116 31	0.8696	+0.010	.071	29
30	1.138	0.9346	329 38	1.2801	115 30	0.8729	+0.010	.069	351
31	1.145	0.9371	329 40	1.2796	114 29	0.8760	+0.008	.078	314
Sept. 1	1.152	0.9395	329 42	1.2792	113 27	0.8790	+0.004	.093	287
2	+1.159	0.9419	329 44	1.2787	112 25	-0.8818	-0.002	.105	263
3	1.166	0.9443	329 46	1.2783	111 23	0.8845	-0.008	.107	241
4	1.173	0.9467	329 48	1.2779	110 21	0.8871	-0.012	.104	217
5	1.179	0.9490	329 51	1.2775	109 19	0.8895	-0.014	.096	189
6	1.186	0.9513	329 53	1.2771	108 17	0.8918	-0.013	.092	157
7	+1.192	0.9535	329 55	1.2767	107 14	-0.8940	-0.008	.093	124
8	1.199	0.9557	329 58	1.2763	106 11	0.8960	-0.001	.098	94
9	1.205	0.9578	330 01	1.2760	105 08	0.8979	+0.006	.106	67
10	1.212	0.9599	330 04	1.2757	104 05	0.8997	+0.012	.108	42
11	1.218	0.9620	330 07	1.2755	103 02	0.9013	+0.016	.109	18
12	+1.224	0.9641	330 10	1.2752	101 59	+0.9028	+0.016	.108	353
13	1.230	0.9661	330 13	1.2750	100 56	0.9042	+0.014	.108	329
14	1.237	0.9681	330 16	1.2748	99 53	0.9054	+0.009	.102	306
15	1.243	0.9701	330 19	1.2746	98 50	0.9065	+0.003	.095	283
16	1.250	0.9720	330 23	1.2744	97 46	0.9075	-0.002	.088	259
17	+1.256	0.9739	330 27	1.2742	96 42	-0.9084	-0.007	.081	232
18	1.262	0.9758	330 31	1.2741	95 38	0.9091	-0.011	.076	203
19	1.268	0.9776	330 35	1.2740	94 34	0.9097	-0.012	.079	175
20	1.274	0.9794	330 39	1.2739	93 30	0.9102	-0.011	.085	151
21	1.280	0.9812	330 43	1.2738	92 26	0.9106	-0.009	.093	129
22	+1.286	0.9830	330 47	1.2738	91 22	+0.9108	-0.005	.096	110
23	1.292	0.9848	330 52	1.2737	90 18	0.9109	0.000	.093	91
24	1.299	0.9866	330 57	1.2737	89 14	0.9109	+0.004	.084	70
25	1.305	0.9883	331 02	1.2737	88 10	0.9107	+0.008	.072	42
26	1.311	0.9900	331 07	1.2737	87 06	0.9104	+0.010	.063	3
27	+1.318	0.9917	331 12	1.2738	86 02	+0.9100	+0.008	.070	323
28	1.324	0.9934	331 18	1.2739	84 58	0.9095	+0.005	.086	292
29	1.330	0.9950	331 24	1.2741	83 54	0.9088	0.000	.102	268
30	1.336	0.9967	331 29	1.2742	82 50	0.9080	-0.006	.109	247
Oct. 1	1.343	0.9983	331 35	1.2744	81 46	0.9071	-0.011	.107	225
2	+1.349	0.9999	331 41	1.2746	80 42	+0.9060	-0.014	.098	199
3	+1.355	1.0015	331 47	1.2748	79 37	+0.9048	-0.013	.090	169

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

 α Ursæ Minoris (*Polaris*). Mag. 2.12

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ₀₁ ^m ₃₅ ^s ₈₈ ^m ₅₅		^h ₀₁ ^m ₃₄ ^s ₈₈ ^m ₅₅		^h ₀₁ ^m ₃₄ ^s ₈₈ ^m ₅₅		^h ₀₁ ^m ₃₄ ^s ₈₈ ^m ₅₅		^h ₀₁ ^m ₃₄ ^s ₈₈ ^m ₅₅		^h ₀₁ ^m ₃₄ ^s ₈₈ ^m ₅₅	
1	^s ₅₁ ·85	["] ₂₀ ·37	^s ₇₆ ·78	["] ₂₁ ·77	^s ₄₇ ·54	["] ₁₇ ·70	^s ₃₀ ·64	["] ₀₉ ·42	^s ₃₃ ·57	["] ₆₀ ·43	^s ₅₄ ·87	["] ₅₃ ·40
2	^s ₅₀ ·88	["] ₂₀ ·48	^s ₇₅ ·75	["] ₂₁ ·74	^s ₄₆ ·71	["] ₁₇ ·52	^s ₃₀ ·29	["] ₀₉ ·11	^s ₃₃ ·96	["] ₆₀ ·12	^s ₅₅ ·91	["] ₅₃ ·23
3	^s ₄₉ ·95	["] ₂₀ ·61	^s ₇₄ ·65	["] ₂₁ ·72	^s ₄₅ ·83	["] ₁₇ ·33	^s ₂₉ ·99	["] ₀₈ ·77	^s ₃₄ ·42	["] ₅₉ ·81	^s ₅₆ ·97	["] ₅₃ ·08
4	^s ₄₉ ·02	["] ₂₀ ·75	^s ₇₃ ·48	["] ₂₁ ·68	^s ₄₄ ·92	["] ₁₇ ·12	^s ₂₉ ·76	["] ₀₈ ·44	^s ₃₄ ·94	["] ₅₉ ·51	^s ₅₈ ·03	["] ₅₂ ·94
5	^s ₄₈ ·06	["] ₂₀ ·90	^s ₇₂ ·25	["] ₂₁ ·63	^s ₄₄ ·00	["] ₁₆ ·89	^s ₂₉ ·60	["] ₀₈ ·09	^s ₃₅ ·53	["] ₅₉ ·21	^s ₅₉ ·05	["] ₅₂ ·82
6	^s ₄₇ ·03	["] ₂₁ ·06	^s ₇₁ ·00	["] ₂₁ ·57	^s ₄₃ ·11	["] ₁₆ ·64	^s ₂₉ ·51	["] ₀₇ ·74	^s ₃₆ ·15	["] ₅₈ ·94	^s ₆₀ ·03	["] ₅₂ ·72
7	^s ₄₅ ·91	["] ₂₁ ·22	^s ₆₉ ·75	["] ₂₁ ·48	^s ₄₂ ·27	["] ₁₆ ·36	^s ₂₉ ·49	["] ₀₇ ·41	^s ₃₆ ·80	["] ₅₈ ·68	^s ₆₀ ·96	["] ₅₂ ·63
8	^s ₄₄ ·71	["] ₂₁ ·36	^s ₆₈ ·52	["] ₂₁ ·36	^s ₄₁ ·50	["] ₁₆ ·08	^s ₂₉ ·52	["] ₀₇ ·08	^s ₃₇ ·44	["] ₅₈ ·44	^s ₆₁ ·84	["] ₅₂ ·53
9	^s ₄₃ ·45	["] ₂₁ ·48	^s ₆₇ ·33	["] ₂₁ ·23	^s ₄₀ ·81	["] ₁₅ ·79	^s ₂₉ ·60	["] ₀₆ ·77	^s ₃₈ ·06	["] ₅₈ ·22	^s ₆₂ ·68	["] ₅₂ ·43
10	^s ₄₂ ·17	["] ₂₁ ·58	^s ₆₆ ·20	["] ₂₁ ·08	^s ₄₀ ·18	["] ₁₅ ·49	^s ₂₉ ·70	["] ₀₆ ·47	^s ₃₈ ·64	["] ₅₈ ·00	^s ₆₃ ·51	["] ₅₂ ·32
11	^s ₄₀ ·88	["] ₂₁ ·66	^s ₆₅ ·15	["] ₂₀ ·92	^s ₃₉ ·61	["] ₁₅ ·22	^s ₂₉ ·78	["] ₀₆ ·19	^s ₃₉ ·16	["] ₅₇ ·78	^s ₆₄ ·37	["] ₅₂ ·20
12	^s ₃₉ ·62	["] ₂₁ ·71	^s ₆₄ ·15	["] ₂₀ ·77	^s ₃₉ ·09	["] ₁₄ ·95	^s ₂₉ ·84	["] ₀₅ ·92	^s ₃₉ ·65	["] ₅₇ ·57	^s ₆₅ ·31	["] ₅₂ ·06
13	^s ₃₈ ·40	["] ₂₁ ·74	^s ₆₃ ·19	["] ₂₀ ·61	^s ₃₈ ·60	["] ₁₄ ·68	^s ₂₉ ·84	["] ₀₅ ·66	^s ₄₀ ·12	["] ₅₇ ·34	^s ₆₆ ·34	["] ₅₁ ·91
14	^s ₃₇ ·22	["] ₂₁ ·77	^s ₆₂ ·27	["] ₂₀ ·47	^s ₃₈ ·11	["] ₁₄ ·43	^s ₂₉ ·81	["] ₀₅ ·38	^s ₄₀ ·61	["] ₅₇ ·09	^s ₆₇ ·46	["] ₅₁ ·77
15	^s ₃₆ ·10	["] ₂₁ ·80	^s ₆₁ ·36	["] ₂₀ ·34	^s ₃₇ ·61	["] ₁₄ ·18	^s ₂₉ ·75	["] ₀₅ ·10	^s ₄₁ ·15	["] ₅₆ ·84	^s ₆₈ ·67	["] ₅₁ ·66
16	^s ₃₅ ·01	["] ₂₁ ·82	^s ₆₀ ·43	["] ₂₀ ·21	^s ₃₇ ·06	["] ₁₃ ·95	^s ₂₉ ·68	["] ₀₄ ·80	^s ₄₁ ·77	["] ₅₆ ·57	^s ₆₉ ·92	["] ₅₁ ·58
17	^s ₃₃ ·95	["] ₂₁ ·84	^s ₅₉ ·48	["] ₂₀ ·09	^s ₃₆ ·47	["] ₁₃ ·71	^s ₂₉ ·65	["] ₀₄ ·48	^s ₄₂ ·50	["] ₅₆ ·30	^s ₇₁ ·16	["] ₅₁ ·52
18	^s ₃₂ ·91	["] ₂₁ ·87	^s ₅₈ ·47	["] ₁₉ ·98	^s ₃₅ ·84	["] ₁₃ ·46	^s ₂₉ ·70	["] ₀₄ ·15	^s ₄₃ ·33	["] ₅₆ ·05	^s ₇₂ ·35	["] ₅₁ ·49
19	^s ₃₁ ·87	["] ₂₁ ·92	^s ₅₇ ·40	["] ₁₉ ·85	^s ₃₅ ·18	["] ₁₃ ·20	^s ₂₉ ·86	["] ₀₃ ·81	^s ₄₄ ·23	["] ₅₅ ·82	^s ₇₃ ·48	["] ₅₁ ·47
20	^s ₃₀ ·79	["] ₂₁ ·97	^s ₅₆ ·29	["] ₁₉ ·72	^s ₃₄ ·53	["] ₁₂ ·92	^s ₃₀ ·12	["] ₀₃ ·47	^s ₄₅ ·16	["] ₅₅ ·62	^s ₇₄ ·52	["] ₅₁ ·44
21	^s ₂₉ ·65	["] ₂₂ ·03	^s ₅₅ ·17	["] ₁₉ ·56	^s ₃₃ ·94	["] ₁₂ ·62	^s ₃₀ ·47	["] ₀₃ ·16	^s ₄₆ ·08	["] ₅₅ ·45	^s ₇₅ ·50	["] ₅₁ ·42
22	^s ₂₈ ·45	["] ₂₂ ·09	^s ₅₄ ·05	["] ₁₉ ·37	^s ₃₃ ·44	["] ₁₂ ·30	^s ₃₀ ·88	["] ₀₂ ·86	^s ₄₆ ·94	["] ₅₅ ·29	^s ₇₆ ·45	["] ₅₁ ·38
23	^s ₂₇ ·18	["] ₂₂ ·12	^s ₅₃ ·01	["] ₁₉ ·16	^s ₃₃ ·04	["] ₁₁ ·97	^s ₃₁ ·31	["] ₀₂ ·59	^s ₄₇ ·74	["] ₅₅ ·13	^s ₇₇ ·39	["] ₅₁ ·33
24	^s ₂₅ ·86	["] ₂₂ ·14	^s ₅₂ ·05	["] ₁₈ ·93	^s ₃₂ ·76	["] ₁₁ ·65	^s ₃₁ ·70	["] ₀₂ ·34	^s ₄₈ ·47	["] ₅₄ ·97	^s ₇₈ ·37	["] ₅₁ ·27
25	^s ₂₄ ·52	["] ₂₂ ·13	^s ₅₁ ·19	["] ₁₈ ·70	^s ₃₂ ·54	["] ₁₁ ·34	^s ₃₂ ·05	["] ₀₂ ·09	^s ₄₉ ·16	["] ₅₄ ·81	^s ₇₉ ·40	["] ₅₁ ·20
26	^s ₂₃ ·21	["] ₂₂ ·10	^s ₅₀ ·42	["] ₁₈ ·47	^s ₃₂ ·37	["] ₁₁ ·04	^s ₃₂ ·34	["] ₀₁ ·84	^s ₄₉ ·84	["] ₅₄ ·63	^s ₈₀ ·49	["] ₅₁ ·13
27	^s ₂₁ ·97	["] ₂₂ ·05	^s ₄₉ ·71	["] ₁₈ ·25	^s ₃₂ ·20	["] ₁₀ ·76	^s ₃₂ ·58	["] ₀₁ ·58	^s ₅₀ ·53	["] ₅₄ ·44	^s ₈₁ ·63	["] ₅₁ ·06
28	^s ₂₀ ·81	["] ₂₁ ·98	^s ₄₉ ·03	["] ₁₈ ·05	^s ₃₁ ·99	["] ₁₀ ·50	^s ₃₂ ·78	["] ₀₁ ·32	^s ₅₁ ·27	["] ₅₄ ·23	^s ₈₂ ·83	["] ₅₁ ·01
29	^s ₁₉ ·73	["] ₂₁ ·91	^s ₄₈ ·32	["] ₁₇ ·87	^s ₃₁ ·72	["] ₁₀ ·24	^s ₃₃ ·00	["] ₀₁ ·04	^s ₅₂ ·08	["] ₅₄ ·01	^s ₈₄ ·07	["] ₅₀ ·98
30	^s ₁₈ ·73	["] ₂₁ ·85	^s ₄₇ ·54	["] ₁₇ ·70	^s ₃₁ ·39	["] ₀₉ ·98	^s ₃₃ ·25	["] ₀₀ ·74	^s ₅₂ ·95	["] ₅₃ ·79	^s ₈₅ ·33	["] ₅₀ ·96
31	^s ₁₇ ·76	["] ₂₁ ·80			^s ₃₁ ·02	["] ₀₉ ·71	^s ₃₃ ·57	["] ₀₀ ·43	^s ₅₃ ·89	["] ₅₃ ·59	^s ₈₆ ·59	["] ₅₀ ·96
32	^s ₁₆ ·78	["] ₂₁ ·77			^s ₃₀ ·64	["] ₀₉ ·42			^s ₅₄ ·87	["] ₅₃ ·40		

Mean R.A. $01^h 35^m 49^s.177$ Mean Dec. $+ 88^\circ 55' 05''.98$ Sec $\delta 52.973$ Tan $\delta + 52.963$

AT UPPER TRANSIT AT GREENWICH.

α Ursæ Minoris (Polaris). Mag. 2.12

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m 01 35 88° 54'		^h ^m 01 36 88° 54'		^h ^m 01 36 88° 55'		^h ^m 01 36 88° 55'		^h ^m 01 36 88° 55'		^h ^m 01 36 88° 55'	
1	26.59	50.96	02.07	53.62	32.29	03.85	51.59	10.90	57.06	23.19	44.43	33.80
2	27.82	50.98	03.06	53.80	33.02	01.12	52.13	11.25	56.96	23.62	43.59	34.12
3	29.01	51.02	04.01	53.98	33.83	01.38	52.70	11.61	56.75	24.05	42.71	34.42
4	30.14	51.07	04.93	54.16	34.72	01.64	53.27	11.99	56.46	24.47	41.83	34.69
5	31.21	51.13	05.87	54.32	35.67	01.92	53.80	12.38	56.09	24.85	40.99	34.95
6	32.21	51.17	06.88	54.46	36.64	02.22	54.25	12.80	55.70	25.21	40.17	35.19
7	33.19	51.20	07.97	54.61	37.60	02.54	54.60	13.23	55.32	25.57	39.42	35.44
8	34.18	51.22	09.14	54.76	38.50	02.89	54.84	13.66	54.97	25.90	38.71	35.67
9	35.23	51.23	10.36	54.95	39.31	03.26	55.02	14.08	54.67	26.23	38.01	35.92
10	36.31	51.25	11.60	55.16	40.05	03.63	55.14	14.47	54.41	26.55	37.31	36.18
11	37.54	51.24	12.82	55.39	40.65	03.99	55.25	14.84	54.18	26.89	36.59	36.45
12	38.83	51.27	13.97	55.64	41.23	04.34	55.39	15.20	53.95	27.23	35.84	36.73
13	40.16	51.32	15.03	55.90	41.77	04.67	55.56	15.54	53.72	27.59	35.03	37.01
14	41.56	51.40	15.99	56.16	42.32	04.99	55.77	15.80	53.47	27.96	34.14	37.28
15	42.82	51.50	16.89	56.42	42.88	05.30	^{56.03} 55.81	^{16.23} 15.83	53.15	28.34	33.19	37.56
16	44.04	51.63	17.75	56.66	43.51	05.60	56.59	16.97	52.77	28.73	32.15	37.83
17	45.19	51.76	18.60	56.89	44.20	05.90	56.86	17.34	52.32	29.11	31.07	38.07
18	46.26	51.90	19.48	57.11	44.90	06.21	57.10	17.74	51.79	29.48	29.97	38.28
19	47.27	52.01	20.39	57.31	45.62	06.53	57.27	18.16	51.18	29.85	28.88	38.47
20	48.27	52.12	21.35	57.52	46.36	06.87	57.37	18.59	50.52	30.19	27.85	38.65
21	49.28	52.21	22.35	57.74	47.07	07.22	57.39	19.01	49.87	30.52	26.89	38.82
22	50.32	52.28	23.40	57.97	47.74	07.60	57.35	19.42	49.23	30.83	26.00	39.00
23	51.41	52.36	24.46	58.21	48.35	07.98	57.23	19.82	48.65	31.12	25.17	39.18
24	52.56	52.44	25.53	58.46	48.89	08.38	57.07	20.21	48.14	31.41	24.35	39.37
25	53.76	52.52	26.58	58.74	49.34	08.77	56.93	20.57	47.70	31.71	23.52	39.58
26	54.69	52.63	27.57	59.03	49.72	09.17	56.83	20.92	47.29	32.03	22.61	39.81
27	56.24	52.76	28.50	59.34	50.06	09.54	56.79	21.26	46.87	32.36	21.61	40.04
28	57.49	52.90	29.37	59.66	50.38	09.90	56.81	21.62	46.40	32.71	20.51	40.26
29	58.71	53.05	30.16	59.97	50.73	10.24	56.90	21.98	45.85	33.07	19.33	40.45
30	59.90	53.23	30.89	60.28	51.13	10.57	57.00	22.36	45.19	33.44	18.12	40.63
31	61.02	53.43	31.59	60.57	51.59	10.90	57.06	22.77	44.43	33.80	16.89	40.78
32	62.07	53.62	32.29	60.85			57.06	23.19			15.67	40.91

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

51 H Cephei. Mag. 5.26

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ₀₇ ^m ₀₇	[°] ₈₇ ['] ₀₉	^h ₀₇ ^m ₀₇	[°] ₈₇ ['] ₁₀	^h ₀₇ ^m ₀₇	[°] ₈₇ ['] ₁₀	^h ₀₇ ^m ₀₇	[°] ₈₇ ['] ₁₀	^h ₀₇ ^m ₀₇	[°] ₈₇ ['] ₁₀	^h ₀₇ ^m ₀₇	[°] ₈₇ ['] ₀₉
1	^s ₄₂ °14	["] ₅₃ '10	^s ₄₂ °86	["] ₀₃ '29	^s ₃₆ °31	["] ₁₀ '92	^s ₂₄ °59	["] ₁₄ '69	^s ₁₂ °82	["] ₁₂ '90	^s ₀₄ °62	["] ₆₆ '26
2	₄₂ °25	₅₃ '39	₄₂ °80	₀₃ '58	₃₆ °04	₁₁ '13	₂₄ °15	₁₄ '75	₁₂ °42	₁₂ '75	₀₄ °44	₆₅ '96
3	₄₂ °37	₅₃ '68	₄₂ °72	₀₃ '89	₃₅ °75	₁₁ '36	₂₃ °69	₁₄ '79	₁₂ °03	₁₂ '59	₀₄ °30	₆₅ '66
4	₄₂ °51	₅₃ '95	₄₂ °64	₀₄ '21	₃₅ °43	₁₁ '59	₂₃ °23	₁₄ '81	₁₁ '66	₁₂ '40	₀₄ '19	₆₅ '36
5	₄₂ °68	₅₄ '23	₄₂ °53	₀₄ '54	₃₅ °08	₁₁ '82	₂₂ °76	₁₄ '81	₁₁ '31	₁₂ '21	₀₄ '09	₆₅ '07
6	₄₂ °86	₅₄ '52	₄₂ °38	₀₄ '88	₃₄ °69	₁₂ °04	₂₂ °30	₁₄ '80	₁₀ '97	₁₂ '01	₀₄ '01	₆₄ '80
7	₄₃ °05	₅₄ '83	₄₂ °20	₀₅ '22	₃₄ °29	₁₂ '23	₂₁ '85	₁₄ '77	₁₀ '66	₁₁ '81	₀₃ '94	₆₄ '54
8	₄₃ °23	₅₅ '17	₄₁ '99	₀₅ '54	₃₃ '87	₁₂ '41	₂₁ '42	₁₄ '73	₁₀ '39	₁₁ '61	₀₃ '86	₆₄ '29
9	₄₃ °47	₅₅ '88	₄₁ '76	₀₅ '84	₃₃ '46	₁₂ '57	₂₁ '01	₁₄ '67	₁₀ '13	₁₁ '42	₀₃ '76	₆₄ '05
10	₄₃ '54	₅₆ '24	₄₁ '51	₀₆ '13	₃₃ '06	₁₂ '71	₂₀ '64	₁₄ '60	₀₉ '88	₁₁ '25	₀₃ '64	₆₃ '80
11	₄₃ '59	₅₆ '61	₄₁ '26	₀₆ '41	₃₂ '66	₁₂ '83	₂₀ '27	₁₄ '55	₀₉ '62	₁₁ '08	₀₃ '51	₆₃ '54
12	₄₃ '62	₅₆ '96	₄₁ '02	₀₆ '66	₃₂ '28	₁₂ '94	₁₉ '92	₁₄ '51	₀₉ '36	₁₀ '92	₀₃ '36	₆₃ '26
13	₄₃ '61	₅₇ '30	₄₀ '78	₀₆ '91	₃₁ '90	₁₃ '05	₁₉ '57	₁₄ '49	₀₉ '08	₁₀ '77	₀₃ '22	₆₂ '96
14	₄₃ '59	₅₇ '63	₄₀ '56	₀₇ '14	₃₁ '55	₁₃ '16	₁₉ '21	₁₄ '48	₀₈ '77	₁₀ '61	₀₃ '11	₆₂ '63
15	₄₃ '59	₅₇ '94	₄₀ '35	₀₇ '38	₃₁ '22	₁₃ '28	₁₈ '83	₁₄ '47	₀₈ '45	₁₀ '42	₀₃ '03	₆₂ '29
16	₄₃ '59	₅₈ '24	₄₀ '16	₀₇ '63	₃₀ '89	₁₃ '41	₁₈ '42	₁₄ '45	₀₈ '12	₁₀ '21	₀₂ '99	₆₁ '95
17	₄₃ '59	₅₈ '54	₃₉ '97	₀₇ '90	₃₀ '55	₁₃ '55	₁₈ '00	₁₄ '42	₀₇ '81	₀₉ '98	₀₃ '00	₆₁ '61
18	₄₃ '60	₅₈ '82	₃₉ '78	₀₈ '17	₃₀ '19	₁₃ '70	₁₇ '56	₁₄ '36	₀₇ '52	₀₉ '72	₀₃ '03	₆₁ '29
19	₄₃ '63	₅₉ '12	₃₉ '58	₀₈ '45	₂₉ '81	₁₃ '85	₁₇ '11	₁₄ '27	₀₇ '27	₀₉ '44	₀₃ '06	₆₀ '98
20	₄₃ '67	₅₉ '43	₃₉ '34	₀₈ '74	₂₉ '39	₁₃ '99	₁₆ '67	₁₄ '16	₀₇ '05	₀₉ '17	₀₃ '10	₆₀ '70
21	₄₃ '71	₅₉ '76	₃₉ '07	₀₉ '03	₂₈ '95	₁₄ '11	₁₆ '28	₁₄ '03	₀₆ '87	₀₈ '91	₀₃ '12	₆₀ '43
22	₄₃ '74	₆₀ '10	₃₈ '76	₀₉ '32	₂₈ '49	₁₄ '21	₁₅ '92	₁₃ '89	₀₆ '71	₀₈ '67	₀₃ '12	₆₀ '16
23	₄₃ '74	₆₀ '47	₃₈ '43	₀₉ '58	₂₈ '04	₁₄ '28	₁₅ '58	₁₃ '75	₀₆ '56	₀₈ '44	₀₃ '10	₅₉ '89
24	₄₃ '71	₆₀ '84	₃₈ '08	₀₉ '81	₂₇ '60	₁₄ '32	₁₅ '27	₁₃ '62	₀₆ '39	₀₈ '23	₀₃ '06	₅₉ '62
25	₄₃ '64	₆₁ '20	₃₇ '73	₁₀ '01	₂₇ '18	₁₄ '34	₁₄ '97	₁₃ '51	₀₆ '20	₀₈ '02	₀₃ '01	₅₉ '32
26	₄₃ '54	₆₁ '55	₃₇ '41	₁₀ '20	₂₆ '80	₁₄ '37	₁₄ '67	₁₃ '41	₀₅ '99	₀₇ '81	₀₂ '97	₅₉ '00
27	₄₃ '41	₆₁ '88	₃₇ '10	₁₀ '37	₂₆ '44	₁₄ '40	₁₄ '33	₁₃ '32	₀₅ '76	₀₇ '59	₀₂ '95	₅₈ '67
28	₄₃ '27	₆₂ '19	₃₆ '83	₁₀ '54	₂₆ '10	₁₄ '43	₁₃ '98	₁₃ '22	₀₅ '52	₀₇ '36	₀₂ '95	₅₈ '34
29	₄₃ '14	₆₂ '47	₃₆ '57	₁₀ '72	₂₅ '75	₁₄ '48	₁₃ '61	₁₃ '13	₀₅ '27	₀₇ '11	₀₂ '97	₅₈ '00
30	₄₃ '02	₆₂ '74	₃₆ '31	₁₀ '92	₂₅ '39	₁₄ '55	₁₃ '22	₁₃ '02	₀₅ '03	₀₆ '84	₀₃ '02	₅₇ '65
31	₄₂ '93	₆₃ '01			₂₅ '01	₁₄ '62	₁₂ '82	₁₂ '90	₀₄ '81	₀₆ '56	₀₃ '09	₅₇ '31
32	₄₂ '86	₆₃ '29			₂₄ '59	₁₄ '69			₀₄ '62	₀₆ '26		

Mean R.A. 07^h 07^m 23^s.756 Mean Dec. + 87° 09' 52".66 Sec δ 20.216 Tan δ + 20.191

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

51 H Cephei. Mag. 5.26

Day	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m 07 07	^s 87 09	^h ^m 07 07	^s 87 00	^h ^m 07 07	^s 87 09	^h ^m 07 07	^s 87 09	^h ^m 07 07	^s 87 09	^h ^m 07 08	^s 87 09
1	23.20	57.31	08.61	47.95	19.91	40.57	34.44	36.52	50.81	36.51	04.84	41.14
2	23.20	56.98	08.92	47.70	20.29	40.39	34.93	36.42	51.39	36.58	05.28	41.40
3	23.32	56.67	09.20	47.47	20.68	40.19	35.46	36.31	51.97	36.67	05.68	41.67
4	03.45	56.38	09.48	47.24	21.08	39.97	36.00	36.20	52.53	36.78	06.04	41.94
5	03.58	56.10	09.73	46.98	21.50	39.75	36.58	36.10	53.08	36.92	06.38	42.21
6	03.49	55.83	09.97	46.72	21.97	39.52	37.18	36.04	53.59	37.07	06.69	42.47
7	03.78	55.56	10.22	46.44	22.47	39.31	37.77	36.01	54.06	37.22	06.99	42.72
8	03.55	55.29	10.50	46.13	23.00	39.12	38.35	36.00	54.52	37.36	07.28	42.96
9	03.02	54.99	10.81	45.81	23.54	38.95	38.91	36.01	54.95	37.50	07.59	43.18
10	03.08	54.67	11.16	45.50	24.08	38.80	39.44	36.02	55.38	37.62	07.91	43.41
11	04.07	54.34	11.55	45.21	24.60	38.67	39.95	36.03	55.82	37.73	08.23	43.63
12	04.16	54.00	11.95	44.93	25.09	38.55	40.43	36.03	56.26	37.84	08.56	43.86
13	04.32	53.64	12.36	44.67	25.55	38.44	40.90	36.03	56.72	37.94	08.92	44.11
14	04.51	53.28	12.77	44.45	25.99	38.33	41.37	36.01	57.20	38.04	09.27	44.37
15	04.73	52.95	13.16	44.24	26.43	38.21	41.85	35.97	57.69	38.16	09.62	44.65
16	04.97	52.63	13.52	44.03	26.86	38.07	42.36	35.93	58.20	38.30	09.96	44.95
17	05.20	52.34	13.87	43.83	27.31	37.91	42.88	35.91	58.71	38.46	10.27	45.27
18	05.43	52.06	14.20	43.62	27.76	37.75	43.42	35.89	59.22	38.63	10.55	45.60
19	05.64	51.80	14.52	43.39	28.24	37.60	43.98	35.88	59.71	38.83	10.79	45.93
20	05.83	51.54	14.85	43.14	28.75	37.45	44.56	35.89	60.18	39.04	11.00	46.24
21	06.00	51.28	15.20	42.89	29.27	37.30	45.14	35.92	60.62	39.27	11.20	46.54
22	06.16	51.00	15.56	42.63	29.80	37.17	45.71	35.97	61.02	39.49	11.39	46.83
23	06.31	50.70	15.94	42.36	30.36	37.06	46.27	36.04	61.41	39.70	11.59	47.09
24	06.48	50.39	16.34	42.09	30.92	36.96	46.81	36.12	61.78	39.89	11.81	47.33
25	06.66	50.07	16.78	41.85	31.48	36.88	47.31	36.20	62.16	40.06	12.06	47.58
26	06.88	49.74	17.23	41.63	32.02	36.83	47.80	36.28	62.55	40.21	12.31	47.84
27	07.11	49.42	17.70	41.42	32.53	36.79	48.27	36.35	62.97	40.37	12.62	48.12
28	07.37	49.10	18.17	41.22	33.03	36.74	48.74	36.40	63.42	40.53	12.89	48.43
29	07.65	48.78	18.62	41.04	33.50	36.68	49.21	36.43	63.89	40.70	13.14	48.76
30	07.96	48.48	19.07	40.88	33.96	36.61	49.72	36.45	64.37	40.91	13.37	49.11
31	08.28	48.21	19.50	40.73	34.44	36.52	50.24	36.47	64.84	41.14	13.56	49.47
32	08.61	47.95	19.91	40.57			50.31	36.51			13.70	49.83

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

4 B Ursæ Minoris. Mag. 7.01

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h 08 ^m 27 ^s 88°50'		^h 08 ^m 27 ^s 88°50'		^h 08 ^m 26 ^s 88°51'		^h 08 ^m 26 ^s 88°51'		^h 08 ^m 25 ^s 88°51'		^h 08 ^m 25 ^s 88°51'	
1	13.21 ^s 48.43 ["]	26.16 ^s 58.04 ["]	79.47 ^s 07.00 ["]	56.31 ^s 13.55 ["]	86.61 ^s 14.82 ["]	59.51 ^s 10.60 ["]						
2	13.79 48.69	26.34 58.33	79.08 07.27	55.35 13.71	85.50 14.79	58.75 10.36						
3	14.38 48.93	26.53 58.65	78.65 07.56	54.34 13.86	84.39 14.73	58.06 10.10						
4	15.02 49.16	26.69 58.99	78.15 07.87	53.28 14.01	83.31 14.65	57.43 09.85						
5	15.71 49.39	26.79 59.33	77.58 08.18	52.19 14.13	82.25 14.55	56.86 09.60						
6	16.43 49.63	26.82 59.70	76.93 08.47	51.09 14.22	81.24 14.43	56.35 09.36						
7	17.19 49.89	26.77 60.06	76.22 08.75	50.01 14.29	80.29 14.32	55.86 09.13						
8	17.95 50.16	26.64 60.43	75.46 09.03	48.95 14.36	79.40 14.20	55.38 08.92						
9	18.68 50.46	26.44 60.77	74.68 09.28	47.93 14.42	78.56 14.10	54.86 08.72						
10	19.34 50.78	26.21 61.10	73.87 09.51	46.96 14.47	77.76 14.00	54.29 08.51						
11	19.93 51.12	25.93 61.42	73.08 09.73	46.05 14.51	76.97 13.91	53.67 08.30						
12	20.44 51.46	25.65 61.72	72.31 09.93	45.18 14.57	76.16 13.83	52.99 08.07						
13	20.87 51.79	25.38 62.01	71.59 10.12	44.33 14.63	75.30 13.75	52.32 07.81						
14	21.25 52.11	25.13 62.30	70.90 10.32	43.47 14.70	74.39 13.67	51.68 07.53						
15	21.59 52.42	24.92 62.59	70.24 10.52	42.55 14.79	73.42 13.57	51.09 07.22						
16	21.91 52.72	24.75 62.87	69.60 10.74	41.59 14.87	72.41 13.45	50.59 06.90						
17	22.23 53.02	24.59 63.17	68.97 10.96	40.55 14.95	71.39 13.30	50.19 06.58						
18	22.56 53.30	24.45 63.48	68.31 11.20	39.43 15.00	70.41 13.13	49.87 06.27						
19	22.93 53.57	24.29 63.81	67.58 11.43	38.29 15.02	69.51 12.94	49.60 05.99						
20	23.33 53.86	24.07 64.16	66.77 11.67	37.17 15.03	68.69 12.74	49.33 05.72						
21	23.75 54.14	23.76 64.50	65.88 11.90	36.08 15.00	67.94 12.53	49.04 05.45						
22	24.20 54.45	23.36 64.84	64.93 12.10	35.04 14.96	67.27 12.35	48.73 05.20						
23	24.64 54.78	22.89 65.17	63.05 12.27	34.09 14.91	66.63 12.18	48.36 04.95						
24	25.05 55.12	22.35 65.48	62.06 12.43	33.20 14.88	65.96 12.02	47.93 04.70						
25	25.39 55.48	21.78 65.77	62.03 12.56	32.35 14.86	65.27 11.87	47.48 04.43						
26	25.65 55.84	21.23 66.02	61.15 12.67	31.50 14.84	64.53 11.73	47.03 04.14						
27	25.80 56.21	20.72 66.26	60.33 12.79	30.63 14.83	63.73 11.58	46.60 03.84						
28	(25.91) (56.53)	20.27 66.49	59.55 12.92	29.71 14.84	62.89 11.41	46.19 03.53						
29	25.91 57.18	19.85 66.74	58.80 13.07	28.72 14.84	62.04 11.24	45.84 03.20						
30	25.95 57.47	19.47 67.00	58.03 13.23	27.69 14.83	61.18 11.05	45.55 02.87						
31	26.03 57.75		57.21 13.39	26.61 14.82	60.32 10.83	45.32 02.52						
32	26.16 58.04		56.31 13.55		59.51 10.60							

Mean R.A. 08^h 26^m 28^s.768 Mean Dec. + 88° 50' 52".85 Sec δ 49.740 Tan δ + 49.730

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

4 B Ursæ Minoris. Mag. 7.01

	AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.			
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.		
	25 ^h 53 ^m 50 ^s	08 ^h 25 ^m 50 ^s	08 ^h 26 ^m 50 ^s	08 ^h 26 ^m 50 ^s	08 ^h 26 ^m 50 ^s	08 ^h 27 ^m 50 ^s	08 ^h 27 ^m 50 ^s	08 ^h 27 ^m 50 ^s	08 ^h 27 ^m 50 ^s	08 ^h 27 ^m 50 ^s		
1	45.32	62.52	47.02	52.20	44.52	42.51	33.38	35.08	10.08	31.08	48.32	32.08
2	45.36	62.18	47.46	51.00	45.22	42.24	34.38	34.86	12.38	31.01	49.61	32.22
3	45.47	61.86	47.85	51.09	45.89	41.96	35.46	34.03	13.81	30.96	50.84	32.37
4	45.02	61.55	48.19	51.39	46.58	41.66	36.61	34.40	15.24	30.94	52.00	32.54
5	44.37	61.26	48.48	51.10	47.31	41.34	37.84	34.18	16.63	30.93	53.07	32.72
6	44.91	60.97	48.74	50.78	48.12	41.01	39.15	33.97	17.96	30.95	54.07	32.89
7	44.81	60.69	49.00	50.45	49.02	40.68	40.48	33.79	19.22	30.97	55.04	33.05
8	44.65	60.41	49.29	50.10	49.00	40.37	41.80	33.63	20.42	30.99	55.97	33.20
9	44.45	60.11	49.65	49.73	49.04	40.08	43.08	33.51	21.57	31.00	56.92	33.34
10	44.24	59.80	50.09	49.35	49.11	39.81	44.31	33.40	22.70	31.01	57.89	33.47
11	44.03	59.46	50.63	48.97	49.16	39.56	45.48	33.29	23.82	31.00	58.89	33.61
12	43.87	59.11	51.24	48.61	49.17	39.34	46.59	33.17	24.97	30.99	59.93	33.76
13	43.79	58.74	51.90	48.27	49.12	39.12	47.67	33.04	26.15	30.97	61.00	33.90
14	43.62	58.36	52.57	47.95	49.02	38.90	48.75	32.90	27.37	30.96	62.10	34.08
15	43.43	57.99	53.21	47.66	49.08	38.67	49.84	32.75	28.64	30.95	63.21	34.27
16	43.10	57.64	53.82	47.38	49.72	38.43	50.96	32.60	29.94	30.96	64.32	34.47
17	42.30	57.31	54.38	47.09	49.57	38.17	52.13	32.44	31.28	30.99	65.39	34.70
18	42.51	56.98	54.89	46.80	49.45	37.91	53.35	32.28	32.64	31.04	66.40	34.94
19	42.68	56.68	55.37	46.49	49.37	37.65	54.62	32.14	33.99	31.12	67.32	35.18
20	42.80	56.39	55.85	46.18	49.35	37.38	55.94	32.01	35.30	31.22	68.17	35.43
21	42.87	56.09	56.35	45.86	49.38	37.11	57.29	31.90	36.55	31.32	68.96	35.67
22	42.91	55.79	56.88	45.52	49.47	36.85	58.67	31.81	37.81	31.41	69.71	35.89
23	42.94	55.46	57.46	45.18	49.61	36.61	60.03	31.73	38.85	31.50	70.46	36.09
24	42.98	55.12	58.10	44.84	49.79	36.39	61.34	31.68	39.92	31.59	71.24	36.28
25	43.03	54.78	58.81	44.50	49.99	36.18	62.61	31.65	40.98	31.66	72.08	36.46
26	43.13	54.41	59.58	44.17	50.17	35.99	63.82	31.61	42.06	31.72	73.00	36.65
27	43.29	54.04	60.41	43.85	50.30	35.82	64.97	31.54	43.19	31.76	73.97	36.86
28	43.51	53.68	61.28	43.56	50.39	35.65	66.09	31.47	44.40	31.81	74.94	37.09
29	43.81	53.31	62.15	43.28	50.41	35.48	67.22	31.39	45.68	31.87	75.90	37.34
30	44.18	52.95	63.00	43.02	50.40	35.29	68.39	31.29	47.00	31.96	76.80	37.61
31	44.58	52.62	63.79	42.76	50.38	35.08	69.65	31.18	48.32	32.08	77.61	37.91
32	45.02	52.29	64.52	42.51			70.98	31.08			78.32	38.22

Catalogue Number 511.

Spectrum Ao.

(1296)

(NAUTICAL ALMANAC, 1928)

R

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

6 B Ursæ Minoris. Mag. 6.28

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m ^s 12 14 88 05	^h ^m ^s 12 15 88 05	^h ^m ^s 12 15 88 05	^h ^m ^s 12 15 88 05	^h ^m ^s 12 15 88 05	^h ^m ^s 12 15 88 05	^h ^m ^s 12 15 88 06	^h ^m ^s 12 15 88 06	^h ^m ^s 12 14 88 06	^h ^m ^s 12 14 88 06	^h ^m ^s 12 14 88 06	^h ^m ^s 12 14 88 06
1	40.24	42.50	00.45	44.37	13.72	50.86	17.58	00.56	69.99	08.82	54.00	13.47
2	40.86	42.48	00.99	44.49	14.04	51.10	17.54	00.90	69.55	09.07	53.34	13.52
3	41.47	42.46	01.56	44.60	14.40	51.34	17.46	01.23	69.08	09.32	52.69	13.56
4	42.07	42.42	02.17	44.73	14.76	51.62	17.34	01.57	68.59	09.55	52.06	13.59
5	42.69	42.38	02.80	44.88	15.10	51.91	17.18	01.90	68.08	09.75	51.46	13.60
6	43.35	42.33	03.43	45.05	15.43	52.23	16.98	02.23	67.57	09.94	50.89	13.61
7	44.06	42.28	04.06	45.25	15.71	52.55	16.75	02.55	67.07	10.12	50.36	13.63
8	44.80	42.24	04.66	45.46	15.95	52.89	16.51	02.85	66.59	10.29	49.85	13.65
9	45.58	42.23	05.22	45.70	16.16	53.23	16.26	03.13	66.13	10.45	49.34	13.68
10	46.35	42.25	05.74	45.94	16.32	53.56	16.03	03.40	65.71	10.60	48.80	13.71
11	47.10	42.28	06.22	46.18	16.45	53.88	15.82	03.66	65.31	10.77	48.24	13.76
12	47.83	42.34	06.67	46.41	16.55	54.20	15.64	03.92	64.92	10.94	47.62	13.80
13	48.55	42.41	07.10	46.64	16.65	54.51	15.48	04.17	64.50	11.13	46.96	13.83
14	49.22	42.49	07.52	46.87	16.74	54.79	15.33	04.45	64.06	11.33	46.26	13.84
15	49.86	42.57	07.92	47.09	16.86	55.07	15.18	04.73	63.58	11.53	45.55	13.83
16	50.48	42.65	08.34	47.30	16.99	55.35	15.00	05.02	63.04	11.71	44.86	13.79
17	51.08	42.72	08.77	47.50	17.15	55.63	14.78	05.33	62.45	11.88	44.20	13.72
18	51.67	42.79	09.22	47.70	17.33	55.92	14.51	05.64	61.83	12.03	43.58	13.64
19	52.27	42.85	09.71	47.91	17.51	56.22	14.17	05.94	61.20	12.15	43.01	13.57
20	52.89	42.90	10.23	48.14	17.68	56.54	13.78	06.21	60.60	12.25	42.48	13.50
21	53.54	42.95	10.74	48.39	17.81	56.88	13.38	06.47	60.03	12.33	41.96	13.44
22	54.22	43.00	11.22	48.65	17.90	57.23	12.97	06.71	59.51	12.40	41.43	13.40
23	54.93	43.08	11.66	48.94	17.92	57.57	12.59	06.92	59.01	12.49	40.88	13.36
24	55.66	43.18	12.05	49.25	17.89	57.92	12.24	07.12	58.54	12.58	40.30	13.34
25	56.39	43.30	12.39	49.54	17.82	58.24	11.93	07.33	58.07	12.69	39.70	13.31
26	57.09	43.45	12.67	49.83	17.73	58.53	11.63	07.55	57.58	12.81	39.05	13.26
27	57.76	43.60	12.93	50.10	17.57	59.10	11.35	07.78	57.06	12.93	38.39	13.20
28	58.37	43.76	13.18	50.37	17.54	59.36	11.05	08.02	56.51	13.05	37.72	13.14
29	58.92	43.93	13.43	50.62	17.54	59.63	10.73	08.28	55.91	13.18	37.05	13.05
30	59.42	44.09	13.72	50.86	17.56	59.92	10.38	08.55	55.30	13.30	36.38	12.94
31	59.93	44.23			17.58	60.23	09.99	08.82	54.66	13.39	35.74	12.82
32	60.45	44.37			17.58	60.56			54.00	13.47		

Mean R.A. 12^h 14^m 33^s.500 Mean Dec. + 88° 05'.56".42 Sec δ 30.145 Tan δ + 30.129

AT UPPER TRANSIT AT GREENWICH.

6 B URSE MINORIS. Mag. 6.28

	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
1	12 14 58 06	12 14 58 05	12 14 58 05	12 14 58 05	12 14 58 05	12 14 58 05	12 14 58 05	12 14 58 05	12 14 58 05	12 14 58 05	12 14 58 05	12 14 58 05
2	35.74	12.82	19.12	67.21	08.48	57.37	05.68	46.06	11.70	34.35	26.17	25.48
3	35.13	12.68	18.75	66.74	08.26	57.05	05.64	45.68	12.05	33.96	26.85	25.24
4	34.56	12.54	18.39	66.48	07.99	56.72	05.60	45.28	12.46	33.56	27.54	25.02
5	34.03	12.39	18.01	66.24	07.70	56.38	05.60	44.86	12.90	33.19	28.22	24.82
6	33.52	12.26	17.60	66.01	07.41	56.01	05.66	44.43	13.38	32.85	28.88	24.65
7	33.03	12.13	17.15	65.78	07.13	55.62	05.77	43.99	13.86	32.52	29.51	24.49
8	32.52	12.01	16.65	65.53	06.89	55.21	05.93	43.56	14.34	32.22	30.10	24.33
9	32.00	11.91	16.14	65.26	06.70	54.80	06.12	43.15	14.78	31.94	30.67	24.17
10	31.44	11.80	15.63	64.96	06.57	54.39	06.34	42.76	15.19	31.65	31.23	24.00
11	30.83	11.68	15.14	64.65	06.49	53.99	06.55	42.39	15.58	31.37	31.79	23.82
12	30.18	11.55	14.70	64.32	06.42	53.60	06.75	42.03	15.96	31.07	32.36	23.64
13	29.51	11.39	14.31	63.97	06.38	53.24	06.92	41.67	16.32	30.77	32.96	23.46
14	28.85	11.20	13.97	63.63	06.34	52.88	07.07	41.33	16.70	30.46	33.59	23.27
15	28.23	11.00	13.67	63.30	06.26	52.53	07.19	40.99	17.10	30.15	34.26	23.08
16	27.65	10.78	13.39	62.98	06.15	52.19	07.31	40.63	17.53	29.83	34.97	22.90
17	27.12	10.55	13.10	62.68	06.01	51.83	07.42	40.25	18.00	29.50	35.70	22.75
18	26.64	10.33	12.81	62.38	05.87	51.48	07.56	39.86	18.51	29.17	36.44	22.61
19	26.10	10.13	12.48	62.10	05.72	51.11	07.71	39.47	19.07	28.85	37.19	22.50
20	25.74	09.93	12.13	61.82	05.58	50.72	07.91	39.07	19.65	28.56	37.93	22.41
21	25.28	09.75	11.76	61.53	05.45	50.32	08.14	38.67	20.25	28.29	38.64	22.32
22	24.80	09.58	11.38	61.22	05.35	49.92	08.42	38.26	20.86	28.04	39.31	22.25
23	24.29	09.41	10.98	60.90	05.29	49.52	08.75	37.87	21.44	27.79	39.93	22.18
24	23.75	09.22	10.60	60.57	05.28	49.10	09.10	37.50	21.97	27.56	40.51	22.09
25	23.19	09.03	10.24	60.22	05.31	48.68	09.46	37.15	22.47	27.34	41.09	21.99
26	22.61	08.83	09.91	59.85	05.37	48.27	09.82	36.80	22.95	27.11	41.69	21.87
27	22.04	08.60	09.61	59.48	05.46	47.87	10.14	36.47	23.41	26.86	42.34	21.75
28	21.45	08.36	09.37	59.11	05.56	47.49	10.43	36.14	23.87	26.59	43.03	21.63
29	20.93	08.10	09.16	58.74	05.64	47.13	10.69	35.81	24.37	26.31	43.77	21.52
30	20.41	07.84	08.99	58.38	05.69	46.77	10.92	35.47	24.92	26.03	44.54	21.43
31	19.95	07.56	08.83	58.03	05.70	46.42	11.15	35.12	25.52	25.74	45.32	21.36
32	19.52	07.28	08.67	57.70	05.68	46.06	11.40	34.74	26.17	25.48	46.10	21.33
33	19.12	07.01	08.48	57.37			11.70	34.35			46.85	21.32

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

57 B Ursæ Minoris. Mag. 7.16

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m ^s 15 00 87 30		^h ^m ^s 15 00 87 30		^h ^m ^s 15 00 87 30		^h ^m ^s 15 00 87 30		^h ^m ^s 15 00 87 30		^h ^m ^s 15 00 87 30	
1	00.17	22.77	13.93	17.54	28.27	18.11	40.06	23.97	44.37	32.67	39.97	41.89
2	00.53	22.55	14.36	17.46	28.71	18.19	40.39	24.21	44.41	33.00	39.66	42.15
3	00.86	22.33	14.83	17.37	29.18	18.27	40.71	24.47	44.42	33.33	39.33	42.40
4	01.18	22.10	15.32	17.27	29.67	18.37	41.01	24.76	44.40	33.68	39.00	42.63
5	01.50	21.86	15.85	17.18	30.17	18.48	41.28	25.06	44.35	34.02	38.68	42.84
6	01.84	21.61	16.40	17.11	30.68	18.61	41.52	25.36	44.27	34.35	38.37	43.04
7	02.21	21.34	16.96	17.06	31.18	18.76	41.73	25.68	^{44.18} ^{44.07}	^{33.67} ^{33.47}	38.08	43.23
8	02.62	21.07	17.52	17.03	31.65	18.93	41.92	25.98	43.97	35.26	37.80	43.43
9	03.06	20.81	18.09	17.01	32.11	19.12	42.08	26.29	43.88	35.52	37.54	43.63
10	03.52	20.57	18.62	17.02	32.53	19.32	42.23	26.59	43.79	35.79	37.28	43.85
11	04.01	20.35	19.15	17.04	32.93	19.52	42.37	26.87	43.72	36.05	37.01	44.07
12	04.50	20.16	19.65	17.07	33.32	19.72	42.52	27.15	43.67	36.30	36.70	44.31
13	04.98	19.98	20.14	17.10	33.69	19.92	42.69	27.41	43.62	36.59	36.34	44.55
14	05.45	19.82	20.60	17.14	34.04	20.11	42.86	27.66	43.56	36.89	35.94	44.79
15	05.91	19.67	21.06	17.18	34.39	20.28	43.04	27.91	43.48	37.20	35.51	45.01
16	06.35	19.53	21.52	17.20	34.75	20.44	43.25	28.17	43.37	37.53	35.07	45.20
17	06.78	19.40	21.98	17.21	35.12	20.60	43.44	28.46	43.20	37.85	34.63	45.37
18	07.19	19.25	22.46	17.20	35.52	20.77	43.63	28.77	43.00	38.17	34.20	45.53
19	07.60	19.09	22.96	17.20	35.94	20.93	43.78	29.08	42.77	38.46	33.80	45.67
20	08.02	18.93	23.49	17.21	36.37	21.12	43.88	29.42	42.53	38.74	33.42	45.80
21	08.46	18.76	24.04	17.23	36.79	21.33	43.94	29.76	42.29	39.00	33.07	45.93
22	08.93	18.58	24.59	17.28	37.18	21.57	43.97	30.09	42.06	39.23	32.72	46.09
23	09.42	18.40	25.14	17.36	37.54	21.84	43.98	30.41	41.86	39.46	32.37	46.25
24	09.94	18.23	25.67	17.45	37.87	22.11	43.98	30.70	41.69	39.69	32.01	46.43
25	10.49	18.09	26.17	17.57	38.15	22.37	44.00	30.97	41.53	39.93	31.63	46.61
26	11.04	17.97	26.62	17.69	38.41	22.63	44.03	31.24	41.36	40.19	31.22	46.79
27	11.58	17.87	27.05	17.81	38.65	22.87	44.08	31.50	41.19	40.46	30.79	46.97
28	12.10	17.80	27.45	17.92	38.89	23.10	44.16	31.76	41.01	40.74	30.33	47.14
29	12.60	17.74	27.85	18.02	39.16	23.32	44.24	32.05	40.79	41.04	29.85	47.30
30	13.06	17.69	28.27	18.11	39.45	23.53	44.31	32.35	40.55	41.33	29.36	47.44
31	13.50	17.62			39.75	23.74	44.37	32.67	40.28	41.62	28.87	47.56
32	13.93	17.54			40.06	23.97			39.97	41.89		

Mean R.A. 15^h 00^m 10^s.786 Mean Dec. + 87° 30' 35".80 Sec δ 23.017 Tan δ + 22.995

AT UPPER TRANSIT AT GREENWICH.

57 B Ursæ Minoris. Mag. 7.16

No.	JAN.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m ^s 15 00 87 30	^h ^m 14 59 87 30	^h ^m ^s 14 59 87 30	^h ^m 14 59 87 30	^h ^m ^s 14 59 87 30	^h ^m 14 59 87 30	^h ^m ^s 14 59 87 30	^h ^m 14 59 87 30	^h ^m ^s 14 59 87 30	^h ^m 14 59 87 30	^h ^m ^s 14 59 87 30	^h ^m 14 59 87 30
1	28.87	47.56	73.46	48.82	57.59	45.21	44.54	37.72	36.30	26.40	35.91	15.57
2	28.87	47.56	72.97	48.75	57.13	45.05	44.13	37.44	36.11	26.55	36.06	15.16
3	27.91	47.75	72.51	48.68	56.64	44.89	43.71	37.15	35.97	26.13	36.26	14.78
4	27.46	47.82	72.04	48.63	56.13	44.73	43.29	36.83	35.87	25.71	36.46	14.41
5	27.03	47.80	71.57	48.60	55.59	44.57	42.88	36.49	35.80	25.30	36.67	14.06
6	26.03	47.96	71.07	48.58	55.04	44.37	42.51	36.13	35.76	24.90	36.88	13.74
7	26.23	48.05	70.53	48.56	54.49	44.14	42.18	35.76	35.72	24.52	37.06	13.43
8	25.22	48.15	69.96	48.53	53.97	43.89	41.88	35.39	35.68	24.15	37.24	13.12
9	25.35	48.26	69.38	48.47	53.48	43.63	41.61	35.03	35.63	23.80	37.41	12.81
10	24.01	48.38	68.78	48.39	53.02	43.35	41.36	34.69	35.58	23.46	37.57	12.49
11	24.11	48.50	68.18	48.29	52.60	43.08	41.12	34.35	35.51	23.12	37.72	12.16
12	23.53	48.60	67.61	48.17	52.19	42.82	40.87	34.03	35.43	22.77	37.88	11.83
13	23.30	48.68	67.08	48.03	51.80	42.58	40.60	33.73	35.33	22.42	38.08	11.48
14	22.73	48.74	66.57	47.88	51.41	42.34	40.32	33.43	35.25	22.05	38.29	11.12
15	22.35	48.78	66.10	47.74	50.99	42.12	40.03	33.12	35.18	21.67	38.53	10.77
16	21.65	48.79	65.62	47.62	50.57	41.91	39.73	32.80	35.14	21.27	38.80	10.41
17	21.15	48.78	65.16	47.51	50.12	41.69	39.42	32.47	35.12	20.86	39.10	10.06
18	20.68	48.77	64.68	47.41	49.66	41.46	39.11	32.12	35.13	20.44	39.43	09.72
19	20.23	48.79	64.19	47.31	49.19	41.22	38.82	31.75	35.17	20.03	39.78	09.41
20	19.77	48.81	63.67	47.22	48.71	40.96	38.57	31.37	35.25	19.62	40.10	09.12
21	19.31	48.81	63.14	47.12	48.26	40.69	38.33	30.98	35.35	19.23	40.40	08.86
22	18.84	48.88	62.60	47.01	47.81	40.40	38.12	30.58	35.45	18.87	40.70	08.60
23	18.36	48.92	62.03	46.89	47.38	40.10	37.94	30.18	35.53	18.52	40.96	08.34
24	17.84	48.97	61.47	46.75	46.98	39.78	37.79	29.80	35.59	18.19	41.20	08.06
25	17.30	49.00	60.92	46.58	46.60	39.45	37.65	29.44	35.63	17.86	41.44	07.77
26	16.74	49.03	60.38	46.40	46.26	39.14	37.51	29.09	35.66	17.52	41.70	07.47
27	16.17	49.04	59.86	46.21	45.93	38.83	37.35	28.75	35.66	17.15	41.99	07.15
28	15.60	49.04	59.37	46.00	45.61	38.53	37.17	28.42	35.67	16.77	42.31	06.84
29	15.04	49.01	58.90	45.78	45.28	38.25	36.98	28.08	35.71	16.39	42.68	06.53
30	14.49	48.96	58.46	45.58	44.92	37.99	36.75	27.73	35.79	15.98	43.08	06.22
31	13.97	48.89	58.02	45.39	44.54	37.72	36.51	27.36	35.91	15.57	43.50	05.94
32	13.46	48.82	57.59	45.21			36.30	26.96			43.93	05.68

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

 ϵ Ursæ Minoris. Mag. 4.40

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09	^h ^m ^s 16 53 82 09
1	10.11	21.47	13.06	12.41	17.42	08.36	22.24	09.91	25.59	16.43	26.66	25.92
2	10.17	21.15	13.17	12.19	17.57	08.30	22.39	10.03	25.67	16.72	26.65	26.28
3	10.22	20.84	13.29	11.96	17.73	08.22	22.54	10.16	25.76	17.03	26.64	26.63
4	10.27	20.54	13.43	11.72	17.89	08.14	22.69	10.32	25.84	17.34	26.61	26.96
5	10.32	20.22	13.57	11.47	18.06	08.08	22.84	10.50	25.90	17.67	^{26.37} ^{26.54}	^{27.21} ^{27.68}
6	10.37	19.89	13.71	11.23	18.25	08.04	22.98	10.70	25.95	18.00	26.52	27.86
7	10.43	19.53	13.86	11.00	18.42	08.02	23.11	10.92	26.01	18.32	26.49	28.13
8	10.49	19.16	14.01	10.79	18.59	08.03	23.24	11.15	26.06	18.63	26.46	28.40
9	10.57	18.79	14.17	10.60	18.76	08.05	23.36	11.37	26.10	18.93	26.44	28.67
10	10.66	18.43	14.32	10.43	18.93	08.09	23.47	11.59	26.15	19.20	26.42	28.95
11	10.75	18.08	14.48	10.29	19.10	08.14	23.58	11.80	26.20	19.46	26.39	29.26
12	10.85	17.75	14.64	10.15	19.26	08.20	23.69	11.99	26.25	19.72	26.37	29.57
13	10.95	17.43	14.79	10.02	19.41	08.26	23.80	12.18	26.30	19.98	26.32	29.90
14	11.05	17.14	14.94	09.91	19.56	08.32	23.92	12.35	26.35	20.26	26.27	30.25
15	11.15	16.87	15.08	09.79	19.71	08.36	24.04	12.52	26.40	20.55	26.21	30.60
16	11.25	16.60	15.22	09.66	19.86	08.40	24.16	12.70	26.46	20.86	26.15	30.91
17	11.35	16.33	15.36	09.53	20.00	08.42	24.28	12.90	26.50	21.18	26.08	31.22
18	11.44	16.06	15.51	09.38	20.16	08.44	24.41	13.12	26.53	21.53	26.00	31.50
19	11.53	15.80	15.66	09.22	20.32	08.47	24.53	13.37	26.55	21.89	25.93	31.76
20	11.62	15.52	15.82	09.06	20.48	08.51	24.63	13.64	26.57	22.24	25.87	32.01
21	11.72	15.23	15.99	08.91	20.66	08.57	24.73	13.92	26.57	22.57	25.80	32.25
22	11.82	14.92	16.16	08.78	20.82	08.66	24.82	14.21	26.57	22.89	25.75	32.49
23	11.93	14.60	16.33	08.67	20.98	08.77	24.91	14.49	26.58	23.18	25.70	32.75
24	12.05	14.28	16.50	08.59	21.14	08.91	24.98	14.75	26.59	23.45	25.64	33.03
25	12.17	13.98	16.67	08.54	21.28	09.07	25.06	15.01	26.60	23.73	25.57	33.33
26	12.30	13.70	16.83	08.50	21.42	09.22	25.14	15.25	26.62	24.00	25.50	33.64
27	12.44	13.44	16.98	08.47	21.55	09.35	25.22	15.47	26.64	24.28	25.42	33.95
28	12.58	13.21	17.13	08.45	21.68	09.47	25.31	15.70	26.65	24.58	25.34	34.25
29	12.70	12.99	17.27	08.41	21.82	09.58	25.40	15.93	26.67	24.89	25.26	34.55
30	12.83	12.80	17.42	08.36	21.95	09.69	25.50	16.17	26.68	25.23	25.16	34.84
31	12.95	12.61			22.09	09.79	25.59	16.43	26.67	25.57	25.06	35.11
32	13.06	12.41			22.24	09.91			26.66	25.92		

Mean R.A. 16^h 53^m 16^s 85ⁱ Mean Dec. + 82° 09' 30" 07 Sec δ 7.329 Tan δ + 7.261

AT UPPER TRANSIT AT GREENWICH.

ε URSE MINORIS. Mag. 4.40

No.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m ^s [°]		^h ^m ^s [°]		^h ^m ^s [°]		^h ^m ^s [°]		^h ^m ^s [°]		^h ^m ^s [°]	
	16 53 82.09		16 53 82.09		16 53 82.09		16 53 82.09		16 53 82.09		16 53 82.09	
1	25.56	35.11	21.24	41.35	16.11	43.34	10.84	40.89	06.23	33.92	03.76	23.85
2	24.06	35.36	21.10	41.45	15.94	43.34	10.67	40.78	06.09	33.62	03.72	23.44
3	24.86	35.59	20.95	41.54	15.76	43.37	10.49	40.65	05.96	33.29	03.68	23.04
4	24.76	35.81	20.82	41.66	15.59	43.40	10.30	40.50	05.85	32.95	03.66	22.64
5	24.66	36.02	20.67	41.70	15.40	43.42	10.12	40.32	05.75	32.60	03.65	22.26
6	24.57	36.22	20.53	41.93	15.21	43.42	09.95	40.12	05.65	32.25	03.63	21.90
7	24.48	36.42	20.37	42.08	15.01	43.39	09.77	39.90	05.55	31.93	03.62	21.55
8	24.39	36.65	20.21	42.23	14.82	43.34	09.61	39.67	05.46	31.62	03.60	21.22
9	24.30	36.90	20.04	42.38	14.63	43.26	09.46	39.43	05.37	31.32	03.58	20.89
10	24.20	37.17	19.87	42.51	14.45	43.17	09.31	39.20	05.28	31.03	03.57	20.56
11	24.09	37.45	19.69	42.62	14.27	43.07	09.17	38.99	05.18	30.75	03.55	20.22
12	23.96	37.72	19.50	42.70	14.10	42.96	09.02	38.78	05.09	30.46	03.53	19.86
13	23.84	37.97	19.33	42.76	13.93	42.88	08.88	38.59	04.99	30.17	03.51	19.49
14	23.70	38.20	19.16	42.79	13.77	42.80	08.74	38.41	04.89	29.86	03.50	19.10
15	23.56	38.41	19.01	42.82	13.60	42.73	08.59	38.23	04.79	29.53	03.50	18.70
16	23.43	38.60	18.85	42.87	13.43	42.68	08.43	38.03	04.70	29.20	03.51	18.29
17	23.29	38.76	18.69	42.93	13.26	42.63	08.27	37.84	04.61	28.84	03.53	17.88
18	23.17	38.91	18.54	42.99	13.09	42.58	08.12	37.63	04.53	28.46	03.55	17.48
19	23.05	39.07	18.38	43.07	12.90	42.51	07.95	37.39	04.45	28.08	03.57	17.11
20	22.93	39.25	18.22	43.15	12.71	42.44	07.80	37.14	04.39	27.69	03.61	16.74
21	22.82	39.43	18.05	43.23	12.53	42.34	07.66	36.87	04.33	27.31	03.64	16.40
22	22.70	39.62	17.87	43.31	12.34	42.23	07.52	36.58	04.28	26.95	03.66	16.08
23	22.57	39.83	17.69	43.38	12.16	42.09	07.38	36.27	04.23	26.61	03.68	15.76
24	22.43	40.04	17.51	43.45	11.98	41.93	07.25	35.97	04.18	26.29	03.70	15.43
25	22.30	40.26	17.33	43.49	11.81	41.76	07.14	35.69	04.12	25.98	03.72	15.09
26	22.16	40.46	17.14	43.50	11.64	41.59	07.02	35.43	04.05	25.67	03.74	14.74
27	22.01	40.66	16.95	43.49	11.48	41.42	06.90	35.18	03.99	25.35	03.76	14.37
28	21.85	40.84	16.78	43.46	11.32	41.27	06.77	34.94	03.92	25.00	03.79	13.97
29	21.70	40.99	16.60	43.43	11.16	41.13	06.64	34.70	03.85	24.63	03.84	13.58
30	21.54	41.13	16.44	43.39	11.00	41.00	06.50	34.46	03.80	24.25	03.90	13.18
31	21.38	41.25	16.27	43.36	10.84	40.89	06.37	34.20	03.76	23.85	03.96	12.79
32	21.24	41.35	16.11	43.34			06.23	33.92		04.02		12.43

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

δ Ursæ Minoris. Mag. 4.44												
Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m 17 55	^s 86 36	^h ^m 17 55	^s 86 36	^h ^m 17 55	^s 86 36	^h ^m 17 55	^s 86 36	^h ^m 17 55	^s 86 36	^h ^m 17 55	^s 86 36
1	10 ^s 43	43 ["] 93	13 ^s 99	34 ["] 02	22 ^s 26	28 ["] 01	33 ^s 20	27 ["] 03	42 ^s 30	31 ["] 54	47 ^s 09	40 ["] 08
2	10 46	43 62	14 17	33 76	22 56	27 88	33 57	27 06	42 58	31 77	47 15	40 43
3	10 48	43 31	14 35	33 49	22 89	27 73	33 94	27 12	42 84	32 01	47 19	40 77
4	10 48	43 00	14 54	33 20	23 22	27 58	34 31	27 20	43 10	32 28	47 21	41 11
5	10 47	42 68	14 76	32 90	23 58	27 44	34 69	27 30	43 33	32 56	47 21	41 43
6	10 46	42 35	15 00	32 60	23 95	27 31	35 06	27 42	43 55	32 84	47 21	41 74
7	10 47	41 99	15 26	32 30	24 33	27 20	35 42	27 55	43 75	33 12	47 20	42 03
8	10 49	41 63	15 55	32 03	24 72	27 11	35 77	27 70	43 93	33 39	47 20	42 30
9	10 54	41 24	15 85	31 77	25 12	27 04	36 09	27 84	44 10	33 65	47 21	42 57
10	10 61	40 86	16 15	31 53	25 50	26 99	36 39	27 99	44 26	33 89	47 23	42 84
11	10 71	40 49	16 45	31 31	25 87	26 95	36 70	28 14	44 42	34 13	47 25	43 12
12	10 82	40 12	16 74	31 11	26 24	26 93	36 99	28 27	44 59	34 36	47 28	43 42
13	10 95	39 77	17 03	30 91	26 59	26 92	37 28	28 39	44 77	34 57	47 30	43 74
14	11 09	39 45	17 31	30 73	26 93	26 89	37 56	28 50	44 96	34 80	47 30	44 09
15	11 22	39 13	17 59	30 54	27 26	26 86	37 86	28 61	45 15	35 05	47 27	44 45
16	11 35	38 83	17 86	30 35	27 58	26 82	38 18	28 72	45 35	35 33	47 22	44 81
17	11 47	38 54	18 13	30 16	27 91	26 77	38 51	28 85	45 53	35 62	47 15	45 16
18	11 59	38 25	18 39	29 95	28 25	26 71	38 84	28 99	45 69	35 93	47 05	45 49
19	11 70	37 96	18 67	29 73	28 61	26 65	39 18	29 16	45 83	36 26	46 94	45 81
20	11 81	37 65	18 97	29 50	28 98	26 60	39 50	29 35	45 95	36 59	46 83	46 10
21	11 91	37 33	19 28	29 27	29 37	26 57	39 80	29 57	46 04	36 92	^{46 74} ^{46 67}	^{46 37} ^{46 33}
22	12 03	36 99	19 61	29 05	29 77	26 57	40 07	29 80	46 12	37 22	46 60	46 90
23	12 17	36 64	19 96	28 87	30 16	26 59	40 31	30 03	46 20	37 50	46 54	47 18
24	12 33	36 28	20 32	28 70	30 54	26 64	40 54	30 24	46 28	37 76	46 48	47 48
25	12 51	35 93	20 68	28 56	30 90	26 71	40 76	30 45	46 36	38 02	46 42	47 78
26	12 72	35 60	21 02	28 45	31 24	26 79	40 98	30 64	46 46	38 27	46 35	48 11
27	12 94	35 29	21 35	28 35	31 56	26 86	41 22	30 81	46 57	38 53	46 25	48 44
28	13 17	35 00	21 66	28 25	31 88	26 91	41 48	30 98	46 69	38 81	46 14	48 79
29	13 39	34 75	21 96	28 13	32 19	26 95	41 74	31 15	46 81	39 10	46 02	49 13
30	13 60	34 50	22 26	28 01	32 51	26 98	42 02	31 34	46 92	39 42	45 88	49 46
31	13 80	34 26			32 85	27 00	42 30	31 54	47 01	39 74	45 71	49 78
32	13 99	34 02			33 20	27 03			47 09	40 08		

Mean R.A. 17^h 55^m 26^s.689 Mean Dec. + 86° 36' 49".09 Sec δ 16.929 Tan δ + 16.900

APPARENT PLACES OF STARS, 1922.

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AT UPPER TRANSIT AT GREENWICH.

δ Ursæ Minoris. Mag. 4.44												
REV.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m ^s 17 55 86 36	^h ^m ^s 17 55 86 36	^h ^m ^s 17 55 86 36	^h ^m ^s 17 55 86 36	^h ^m ^s 17 55 86 37	^h ^m ^s 17 55 86 36	^h ^m ^s 17 55 86 36	^h ^m ^s 17 54 86 36	^h ^m ^s 17 54 86 36	^h ^m ^s 17 54 86 36	^h ^m ^s 17 54 86 36	^h ^m ^s 17 54 86 36
1	45.71	49.78	38.53	57.85	27.32	02.58	14.59	63.14	61.97	59.14	53.12	51.14
2	45.53	50.08	38.22	58.02	26.95	02.67	14.16	63.12	61.56	58.93	52.90	50.78
3	45.35	50.36	37.93	58.19	26.56	02.77	13.71	63.09	61.16	58.70	52.71	50.41
4	45.16	50.62	37.65	58.38	26.16	02.90	13.24	63.06	60.79	58.44	52.55	50.05
5	44.99	50.87	37.37	58.57	25.73	03.02	12.76	63.00	60.44	58.18	52.39	49.71
6	44.83	51.11	37.07	58.78	25.30	03.13	12.28	62.91	60.11	57.91	52.25	49.39
7	44.69	51.36	36.76	59.01	24.84	03.21	11.83	62.80	59.80	57.65	52.12	49.08
8	44.55	51.63	36.44	59.25	24.37	03.27	11.39	62.67	59.50	57.41	51.99	48.78
9	44.40	51.92	36.09	59.49	23.90	03.30	10.98	62.53	59.21	57.18	51.84	48.48
10	44.24	52.22	35.71	59.72	23.45	03.32	10.58	62.39	58.91	56.96	51.69	48.18
11	44.05	52.55	35.32	59.91	23.02	03.32	10.19	62.26	58.61	56.74	51.52	47.88
12	43.85	52.87	34.93	60.08	22.60	03.32	09.81	62.15	58.30	56.52	51.36	47.56
13	43.62	53.19	34.54	60.23	22.20	03.33	09.44	62.05	57.99	56.31	51.20	47.22
14	43.37	53.48	34.16	60.36	21.81	03.34	09.05	61.96	57.66	56.08	51.05	46.87
15	43.10	53.76	33.80	60.49	21.42	03.36	08.65	61.86	57.34	55.84	50.91	46.51
16	42.83	54.02	33.46	60.61	21.02	03.40	08.24	61.77	57.01	55.57	50.79	46.13
17	42.56	54.26	33.12	60.75	20.62	03.44	07.83	61.68	56.69	55.28	50.69	45.73
18	42.32	54.48	32.78	60.89	20.20	03.49	07.40	61.56	56.39	54.98	50.61	45.34
19	42.09	54.70	32.45	61.05	19.76	03.53	06.97	61.43	56.11	54.66	50.56	44.98
20	41.86	54.92	32.10	61.21	19.32	03.56	06.54	61.28	55.84	54.34	50.52	44.62
21	41.64	55.15	31.74	61.38	18.86	03.58	06.11	61.11	55.59	54.02	50.49	44.28
22	41.42	55.40	31.36	61.56	18.40	03.58	05.69	60.91	55.36	53.72	50.44	43.97
23	41.20	55.66	30.97	61.72	17.94	03.55	05.30	60.71	55.14	53.43	50.38	43.66
24	40.97	55.94	30.56	61.88	17.47	03.51	04.93	60.50	54.92	53.15	50.32	43.36
25	40.71	56.21	30.14	62.02	17.03	03.44	04.57	60.30	54.68	52.89	50.25	43.05
26	40.43	56.49	29.71	62.14	16.60	03.36	04.22	60.11	54.44	52.64	50.16	42.72
27	40.14	56.76	29.28	62.24	16.18	03.29	03.88	59.94	54.18	52.38	50.08	42.36
28	39.83	57.02	28.86	62.32	15.78	03.23	03.52	59.77	53.91	52.11	50.02	41.99
29	39.51	57.26	28.45	62.38	15.39	03.19	03.16	59.62	53.64	51.81	49.98	41.59
30	39.18	57.48	28.06	62.44	15.00	03.16	02.78	59.48	53.37	51.49	49.97	41.19
31	38.85	57.67	27.68	62.51	14.59	03.14	02.38	59.32	53.12	51.14	49.98	40.80
32	38.53	57.85	27.32	62.58			01.97	59.14		50.02	40.42	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

 λ Ursæ Minoris. Mag. 6.55

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m 18 48	^s 89 01	^h ^m 18 48	^s 89 01	^h ^m 18 48	^s 89 01	^h ^m 18 49	^s 89 01	^h ^m 18 49	^s 89 01	^h ^m 18 50	^s 89 01
1	16.65	53.75	19.22	43.58	41.38	36.18	17.06	33.04	51.40	35.52	14.62	42.77
2	16.46	53.45	19.56	43.30	42.25	35.99	18.32	33.00	52.53	35.68	15.11	43.08
3	16.22	53.15	19.89	43.01	43.18	35.79	19.64	32.98	53.64	35.87	15.52	43.41
4	15.92	52.85	20.27	42.69	44.18	35.57	20.99	32.98	54.72	36.07	15.85	43.73
5	15.57	52.55	20.71	42.35	45.25	35.36	22.36	33.00	55.75	36.28	16.12	44.03
6	15.21	52.23	21.24	42.02	46.39	35.16	23.71	33.03	56.72	36.50	16.35	44.34
7	14.86	51.89	21.86	41.68	47.59	34.97	25.03	33.09	57.61	36.73	16.55	44.62
8	14.57	51.53	22.57	41.36	48.83	34.81	26.30	33.16	58.43	36.96	16.76	44.89
9	14.37	51.16	23.33	41.05	50.09	34.67	27.52	33.24	59.20	37.18	16.99	45.15
10	14.25	50.78	24.14	40.77	51.35	34.55	28.68	33.32	59.94	37.39	17.26	45.40
11	14.23	50.41	24.97	40.50	52.59	34.44	29.78	33.39	60.67	37.58	17.58	45.66
12	14.28	50.05	25.80	40.25	53.78	34.34	30.85	33.46	61.41	37.76	17.94	45.94
13	14.39	49.69	26.60	40.01	54.93	34.25	31.89	33.52	62.20	37.93	18.29	46.24
14	14.53	49.34	27.37	39.78	56.03	34.16	32.94	33.56	63.04	38.11	18.59	46.57
15	14.70	49.01	28.12	39.55	57.09	34.07	34.03	33.60	63.93	38.31	18.80	46.92
16	14.87	48.69	28.82	39.32	58.14	33.97	35.19	33.63	64.83	38.53	18.92	47.28
17	15.02	48.40	29.49	39.07	59.18	33.86	36.40	33.68	65.71	38.78	18.94	47.64
18	15.14	48.10	30.17	38.81	60.26	33.73	37.66	33.76	66.55	39.05	18.86	47.98
19	15.22	47.80	30.88	38.54	61.41	33.60	38.94	33.86	67.29	39.33	18.73	48.31
20	15.28	47.48	31.65	38.26	62.63	33.48	40.19	33.99	67.92	39.63	18.59	48.61
21	15.33	47.16	32.51	37.97	63.92	33.36	41.37	34.14	68.46	39.92	18.49	48.88
22	15.40	46.82	33.46	37.70	65.26	33.28	42.48	34.31	68.94	40.19	18.43	49.16
23	15.52	46.45	34.49	37.45	66.61	33.23	43.49	34.48	69.39	40.45	18.42	49.44
24	15.72	46.08	35.56	37.23	67.94	33.20	44.42	34.64	69.85	40.69	18.46	49.72
25	16.02	45.71	36.64	37.03	69.21	33.19	45.33	34.79	70.35	40.92	18.52	50.01
26	16.42	45.34	37.70	36.86	70.40	33.20	46.23	34.92	70.91	41.15	18.58	50.32
27	16.90	45.00	38.70	36.69	71.51	33.20	47.16	35.03	71.52	41.37	18.60	50.65
28	17.41	44.68	39.64	36.53	72.59	33.19	48.14	35.14	72.16	41.61	18.58	50.99
29	17.93	44.38	40.52	36.36	73.64	33.16	49.19	35.26	72.81	41.88	18.50	51.35
30	18.41	44.11	41.38	36.18	74.72	33.12	50.28	35.38	73.45	42.16	18.34	51.71
31	18.84	43.85			75.86	33.08	51.40	35.52	74.07	42.46	18.10	52.05
32	19.22	43.58			77.06	33.04			74.62	42.77		

Mean R.A. 18^h 49^m 14^s.157 Mean Dec. + 80° 01' 55".60 Sec δ 59.199 Tan δ + 59.191

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

λ Ursæ Minoris. Mag. 6.55

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 18 49	[°] ['] 89 01	^h ^m 18 49	[°] ['] 89 02	^h ^m 18 48	[°] ['] 89 02	^h ^m 18 47	[°] ['] 89 02	^h ^m 18 47	[°] ['] 89 02	^h ^m 18 46	[°] ['] 89 01
1	78.10	52.05	59.88	01.65	85.31	08.52	101.92	11.69	54.68	10.48	76.66	64.66
2	77.79	52.39	58.96	01.88	84.12	08.69	100.42	11.77	53.05	10.36	75.57	64.36
3	77.42	52.72	58.09	02.10	82.91	08.87	98.84	11.85	51.45	10.22	74.57	64.04
4	77.02 76.01	53.02 53.02	57.27	02.33	81.64	09.07	97.18	11.91	49.92	10.05	73.67	63.73
5	76.23	53.60	56.49	02.58	80.29	09.28	95.47	11.95	48.46	09.86	72.86	63.43
6	75.89	53.86	55.70	02.85	78.85	09.48	93.75	11.96	47.10	09.67	72.08	63.15
7	75.59	54.13	54.86	03.15	77.32	09.66	92.05	11.95	45.82	09.49	71.32	62.88
8	75.34	54.42	53.94	03.45	75.76	09.81	90.41	11.91	44.59	09.33	70.57	62.63
9	75.10	54.73	52.92	03.75	74.18	09.94	88.84	11.86	43.37	09.17	69.79	62.37
10	74.82	55.05	51.81	04.04	72.62	10.04	87.36	11.81	42.15	09.01	68.98	62.12
11	74.48	55.40	50.61	04.31	71.12	10.13	85.94	11.78	40.92	08.87	68.15	61.87
12	74.05	55.76	49.38	04.55	69.69	10.22	84.53	11.75	39.65	08.73	67.30	61.60
13	73.51	56.12	48.14	04.77	68.33	10.31	83.14	11.73	38.35	08.59	66.43	61.31
14	72.87	56.45	46.94	04.98	67.01	10.40	81.73	11.72	37.02	08.44	65.56	61.00
15	72.16	56.76	45.80	05.18	65.70	10.50	80.28	11.71	35.65	08.27	64.72	60.68
16	71.43	57.06	44.73	05.37	64.37	10.62	78.80	11.71	34.27	08.09	63.94	60.35
17	70.71	57.35	43.70	05.57	63.01	10.75	77.26	11.71	32.89	07.88	63.23	60.00
18	70.04	57.61	42.68	05.78	61.60	10.89	75.67	11.68	31.55	07.66	62.61	59.65
19	69.42	57.87	41.66	06.00	60.14	11.01	74.06	11.64	30.26	07.41	62.08	59.31
20	68.85	58.13	40.63	06.24	58.63	11.13	72.43	11.58	29.04	07.15	61.62	58.98
21	68.31	58.41	39.54	06.48	57.06	11.25	70.78	11.50	27.90	06.90	61.19	58.66
22	67.78	58.69	38.40	06.72	55.45	11.34	69.17	11.40	26.85	06.66	60.76	58.36
23	67.23	59.00	37.20	06.97	53.81	11.41	67.62	11.29	25.83	06.43	60.28	58.08
24	66.65	59.32	35.92	07.20	52.18	11.46	66.14	11.16	24.83	06.21	59.74	57.81
25	66.01	59.64	34.59	07.42	50.58	11.49	64.73	11.04	23.80	06.01	59.16	57.52
26	65.30	59.97	33.21	07.62	49.03	11.50	63.37	10.94	22.71	05.82	58.53	57.21
27	64.52	60.28	31.81	07.80	47.55	11.52	62.04	10.85	21.56	05.63	57.89	56.89
28	63.67	60.58	30.42	07.96	46.12	11.54	60.70	10.77	20.34	05.42	57.29	56.55
29	62.75	60.87	29.06	08.10	44.74	11.58	59.30	10.71	19.09	05.19	56.78	56.19
30	61.80	61.15	27.76	08.23	43.35	11.63	57.83	10.65	17.84	04.94	56.38	55.82
31	60.84	61.41	26.51	08.37	41.92	11.69	56.29	10.57	16.66	04.66	56.08	55.45
32	59.88	61.65	25.31	08.52			54.68	10.48			55.87	55.07

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Groombridge 3548. Mag. 7.36

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m 21 13	^s 86 44	^h ^m 21 13	^s 86 44	^h ^m 21 13	^s 86 44	^h ^m 21 13	^s 86 44	^h ^m 21 13	^s 86 44	^h ^m 21 14	^s 86 44
1	43.47	36.72	37.35	28.03	37.78	18.67	44.39	10.81	54.53	07.80	05.29	10.39
2	43.23	36.50	37.25	27.75	37.86	18.38	44.67	10.60	54.92	07.77	05.63	10.59
3	42.98	36.30	37.14	27.45	37.95	18.08	44.97	10.38	55.32	07.76	05.95	10.79
4	42.71	36.10	37.02	27.13	38.05	17.76	45.29	10.17	55.72	07.76	06.26	11.00
5	42.43	35.89	36.90	26.80	38.17	17.44	45.63	09.98	56.12	07.80	06.55	11.22
6	42.14	35.69	36.80	26.44	38.32	17.10	45.99	09.81	56.51	07.83	06.82	11.43
7	41.84	35.46	36.73	26.07	38.48	16.78	46.35	09.67	56.89	07.89	07.07	11.64
8	41.54	35.21	36.69	25.70	38.67	16.46	46.71	09.54	57.24	07.95	07.31	11.83
9	41.25	34.94	36.66	25.34	38.88	16.15	47.06	09.43	57.59	08.01	07.55	12.01
10	40.97	34.65	36.66	24.99	39.10	15.86	47.40	09.32	57.92	08.07	07.80	12.18
11	40.70	34.34	36.68	24.65	39.32	15.59	47.73	09.22	58.24	08.12	08.06	12.36
12	40.46	34.03	36.71	24.32	39.55	15.33	48.04	09.12	58.56	08.16	08.34	12.54
13	40.25	33.72	36.74	24.00	39.77	15.09	48.34	09.01	58.87	08.19	08.64	12.75
14	40.06	33.42	36.77	23.70	39.98	14.85	48.63	08.88	59.20	08.22	08.95	12.98
15	39.88	33.14	36.80	23.40	40.18	14.61	48.93	08.75	59.55	08.25	09.25	13.23
16	39.71	32.86	36.82	23.10	40.37	14.37	49.25	08.62	59.91	08.31	09.53	13.52
17	39.54	32.59	36.82	22.80	40.55	14.13	49.58	08.49	60.30	08.39	09.79	13.81
18	39.37	32.32	36.81	22.49	40.73	13.87	49.94	08.37	60.69	08.49	10.02	14.11
19	39.19	32.06	36.81	22.16	40.92	13.59	50.31	08.27	61.07	08.62	10.22	14.39
20	39.00	31.79	36.81	21.81	41.14	13.30	50.70	08.19	61.44	08.77	10.40	14.66
21	38.80	31.51	36.83	21.46	41.38	13.02	51.09	08.14	61.78	08.93	10.57	14.92
22	38.59	31.22	36.88	21.10	41.64	12.76	51.48	08.11	62.10	09.09	10.75	15.16
23	38.38	30.91	36.96	20.74	41.93	12.52	51.85	08.09	62.40	09.23	10.96	15.39
24	38.18	30.59	37.05	20.40	42.23	12.30	52.19	08.08	62.68	09.36	11.16	15.62
25	38.01	30.24	37.17	20.07	42.53	12.11	52.53	08.06	62.96	09.48	11.38	15.85
26	37.86	29.88	37.31	19.76	42.84	11.93	52.84	08.04	63.26	09.59	11.61	16.11
27	37.74	29.54	37.45	19.49	43.13	11.77	53.15	08.01	63.57	09.69	11.85	16.38
28	37.65	29.20	37.58	19.21	43.39	11.60	53.47	07.96	63.89	09.80	12.08	16.66
29	37.57	28.88	37.69	18.94	43.63	11.42	53.81	07.90	64.23	09.91	12.31	16.97
30	37.50	28.58	37.78	18.67	43.87	11.22	54.16	07.84	64.58	10.05	12.52	17.29
31	37.44	28.30			44.13	11.02	54.53	07.80	64.94	10.21	12.70	17.62
32	37.35	28.03			44.39	10.81			65.29	10.39		

Mean R.A. 21^h 13^m 59^s.340 Mean Dec. + 86° 44' 29".84 Sec δ 17.594 Tan δ + 17.565

APPARENT PLACES OF STARS, 1928.

245

AT UPPER TRANSIT AT GREENWICH.

Groombridge 3548. Mag. 7.36

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m ^s 21 14 86° 44'		^h ^m ^s 21 14 86° 44'		^h ^m ^s 21 14 86° 44'		^h ^m ^s 21 13 86° 44'		^h ^m ^s 21 13 86° 44'		^h ^m ^s 21 13 86° 44'	
1	12.70	17.62	15.22	27.97	11.78	39.12	63.73	48.19	51.81	54.24	38.96	55.13
2	12.87	17.94	15.16	28.30	11.61	39.44	63.44	48.48	51.35	54.37	38.50	55.06
3	13.03	18.26	15.10	28.63	11.44	39.77	63.12	48.77	50.88	54.49	38.05	54.95
4	13.16	18.58	15.06	28.94	11.28	40.13	62.77	49.07	50.41	54.59	37.63	54.84
5	13.27	18.88	15.03	29.26	11.11	40.50	62.40	49.35	49.94	54.66	37.24	54.72
6	13.38	19.17	15.01	29.59	10.90	40.88	62.00	49.61	49.50	54.71	36.86	54.59
7	13.48	19.44	15.01	29.93	10.66	41.26	61.59	49.85	49.07	54.75	36.50	54.49
8	13.61	19.71	15.01	30.29	10.41	41.61	61.19	50.07	48.66	54.79	36.14	54.40
9	13.75	19.99	14.99	30.66	10.13	41.95	60.80	50.27	48.26	54.84	35.79	54.31
10	13.89	20.29	^(11.59) 14.82	^(31.07) 31.88	09.84	42.26	60.42	50.45	47.87	54.90	35.43	54.22
11	14.05	20.60	14.82	31.88	09.55	42.56	60.04	50.63	47.49	54.96	35.06	54.13
12	14.22	20.94	14.70	32.28	09.27	42.84	59.69	50.81	47.10	55.02	34.67	54.04
13	14.37	21.30	14.57	32.65	09.00	43.12	59.34	51.00	46.69	55.10	34.28	53.94
14	14.48	21.68	14.43	32.99	08.75	43.39	59.00	51.21	46.28	55.18	33.88	53.81
15	14.58	22.06	14.29	33.31	08.52	43.67	58.65	51.43	45.85	55.25	33.47	53.67
16	14.65	22.43	14.17	33.63	08.29	43.97	58.31	51.64	45.40	55.31	33.06	53.51
17	14.69	22.78	14.06	33.94	08.05	44.28	57.94	51.86	44.93	55.35	32.65	53.33
18	14.72	23.12	13.97	34.27	07.81	44.59	57.56	52.08	44.46	55.36	32.27	53.14
19	14.74	23.44	13.88	34.60	07.56	44.91	57.15	52.29	43.99	55.35	31.91	52.94
20	14.77	23.75	13.79	34.95	07.29	45.25	56.73	52.49	43.53	55.32	31.57	52.73
21	14.82	24.05	13.70	35.31	07.00	45.58	56.29	52.66	43.10	55.28	31.26	52.55
22	14.89	24.36	13.60	35.69	06.68	45.89	55.85	52.81	42.68	55.25	30.96	52.38
23	14.96	24.68	13.49	36.07	06.34	46.19	55.40	52.94	42.28	55.21	30.66	52.22
24	15.04	25.00	13.35	36.46	05.99	46.47	54.97	53.07	41.89	55.17	30.34	52.07
25	15.12	25.35	13.19	36.84	05.64	46.73	54.55	53.20	41.52	55.18	30.02	51.93
26	15.19	25.71	13.01	37.21	05.28	46.97	54.15	53.31	41.14	55.19	29.68	51.78
27	15.24	26.08	12.80	37.55	04.94	47.20	53.77	53.43	40.74	55.21	29.31	51.62
28	15.28	26.46	12.59	37.88	04.62	47.43	53.41	53.57	40.32	55.21	28.94	51.43
29	15.30	26.86	12.37	38.21	04.31	47.67	53.03	53.72	39.88	55.20	28.58	51.21
30	15.30	27.24	12.16	38.52	04.02	47.92	52.65	53.90	39.42	55.18	28.23	50.96
31	15.27	27.61	11.96	38.82	03.73	48.19	52.24	54.07	38.96	55.13	27.91	50.70
32	15.22	27.97	11.78	39.12			51.81	54.24			27.61	50.43

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

39 H Cephei. Mag. 5.62												
Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54	^h ^m ^s 23 27 86 54
1	33.13	49.97	22.02	45.72	16.15	37.80	16.67	28.22	23.53	21.06	34.68	18.36
2	32.77	49.91	21.73	45.53	16.03	37.53	16.77	27.90	23.86	20.86	35.11	18.37
3	32.42	49.85	21.43	45.34	15.90	37.23	16.89	27.58	24.19	20.67	35.54	18.40
4	32.08	49.83	21.12	45.14	15.77	36.92	17.03	27.26	24.55	20.49	35.95	18.45
5	31.70	49.80	20.80	44.91	15.65	36.59	17.20	26.95	24.92	20.33	36.34	18.51
6	31.30	49.78	20.48	44.67	15.55	36.24	17.40	26.65	25.30	20.19	36.73	18.57
7	30.88	49.74	20.17	44.40	15.47	35.88	17.62	26.36	25.67	20.07	37.08	18.63
8	30.45	49.67	19.88	44.11	15.42	35.53	17.85	26.08	26.02	19.96	37.42	18.68
9	30.01	49.58	19.62	43.82	15.40	35.18	18.08	25.82	26.36	19.86	37.74	18.72
10	29.56	49.47	19.38	43.53	15.41	34.83	18.32	25.59	26.68	19.77	38.08	18.75
11	29.13	49.35	19.16	43.24	15.43	34.50	18.54	25.36	27.00	19.67	38.42	18.77
12	28.72	49.20	18.97	42.95	15.46	34.19	18.75	25.13	27.30	19.56	38.79	18.80
13	28.34	49.04	18.79	42.67	15.49	33.91	18.93	24.91	27.59	19.44	39.19	18.84
14	27.97	48.89	18.61	42.40	15.52	33.60	19.10	24.68	27.89	19.31	39.62	18.90
15	27.63	48.73	18.44	42.15	15.54	33.31	19.27	24.44	28.23	19.18	40.06	18.99
16	27.29	48.58	18.26	41.90	15.55	33.03	19.45	24.18	28.59	19.05	40.50	19.10
17	26.97	48.44	18.06	41.66	15.53	32.74	19.65	23.90	28.98	18.93	40.92	19.24
18	26.65	48.30	17.85	41.40	15.51	32.44	19.88	23.63	29.39	18.84	41.32	19.39
19	26.32	48.18	17.63	41.13	15.49	32.12	20.14	23.37	29.82	18.78	41.68	19.55
20	25.97	48.05	17.40	40.85	15.48	31.78	20.43	23.13	30.25	18.75	42.03	19.69
21	25.61	47.93	17.18	40.55	15.50	31.44	20.75	22.91	30.65	18.74	42.35	19.82
22	25.23	47.79	16.96	40.22	15.56	31.09	21.08	22.71	31.03	18.73	42.67	19.94
23	24.84	47.62	16.79	39.88	15.66	30.75	21.39	22.54	31.38	18.72	42.99	20.05
24	24.44	47.43	16.65	39.54	15.78	30.43	21.69	22.38	31.72	18.70	43.32	20.14
25	24.05	47.22	16.54	39.21	15.92	30.14	21.97	22.23	32.04	18.67	43.68	20.24
26	23.69	47.00	16.47	38.90	16.07	29.85	22.22	22.06	32.36	18.63	44.05	20.34
27	23.35	46.77	16.40	38.60	16.21	29.59	22.47	21.88	32.70	18.56	44.44	20.47
28	23.05	46.53	16.34	38.33	16.33	29.34	22.72	21.69	33.06	18.50	44.84	20.60
29	22.77	46.30	16.26	38.06	16.43	29.08	22.97	21.49	33.44	18.44	45.24	20.76
30	22.52	46.09	16.15	37.80	16.51	28.81	23.23	21.27	33.84	18.40	45.64	20.94
31	22.28	45.90			16.59	28.52	23.53	21.06	34.26	18.38	46.02	21.13
32	22.02	45.72			16.67	28.22			34.68	18.36		

Mean R.A. 23^h 27^m 42^s.494 Mean Dec. + 86° 54' 37".29 Sec δ 18.553 Tan δ + 18.527

APPARENT PLACES OF STARS, 1928.

247

AT UPPER TRANSIT AT GREENWICH.

39 H Cephei. Mag. 5.62

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₄	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₄	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₄	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₄	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₄	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₄	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₄	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₄	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₅	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₅	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₅	^h ₂₃ ^m ₂₇ ^s ₈₆ [°] ₅₅
1	46.02	21.13	55.16	28.79	59.62	39.51	58.78	51.29	52.53	02.01	41.97	08.91
2	46.39	21.34	55.34	29.11	59.67	39.85	58.72	51.67	52.23	02.35	41.51	09.05
3	46.74	21.55	55.50	29.41	59.73	40.20	58.65	52.07	51.89	02.68	41.06	09.17
4	47.06	21.77	55.67	29.69	59.82	40.56	58.55	52.49	51.54	02.98	40.62	09.27
5	47.36	21.98	55.85	29.97	59.92	40.93	58.42	52.91	51.17	03.25	40.19	09.36
6	47.64	22.17	56.06	30.25	60.02	41.32	58.25	53.32	50.81	03.50	39.80	09.44
7	47.91	22.35	56.29	30.54	60.10	41.75	58.06	53.71	50.47	03.74	39.42	09.52
8	48.19	22.51	56.54	30.85	60.14	42.18	57.84	54.08	50.14	03.97	39.05	09.61
9	48.50	22.68	56.79	31.18	60.16	42.60	57.62	54.43	49.84	04.19	38.68	09.71
10	48.83	22.85	57.04	31.54	60.14	43.03	57.41	54.76	49.54	04.42	38.31	09.81
11	49.19	23.04	57.26	31.92	60.10	43.43	57.22	55.08	49.25	04.67	37.94	09.92
12	49.57	23.26	57.45	32.31	60.04	43.82	57.04	55.40	48.97	04.92	37.54	10.04
13	49.94	23.50	57.61	32.70	^{59.98} _{59.94}	^{44.17} _{44.53}	56.87	55.72	48.68	05.18	37.13	10.15
14	50.30	23.77	57.74	33.07	59.92	44.88	56.72	56.05	48.37	05.44	36.69	10.24
15	50.64	24.06	57.85	33.43	59.90	45.22	56.56	56.39	48.03	05.70	36.24	10.32
16	50.94	24.35	57.95	33.76	59.89	45.58	56.41	56.75	47.68	05.96	35.77	10.38
17	51.22	24.64	58.06	34.08	59.90	45.96	56.24	57.11	47.31	06.22	35.30	10.42
18	51.47	24.92	58.18	34.41	59.91	46.33	56.05	57.48	46.91	06.45	34.84	10.43
19	51.70	25.17	58.31	34.72	59.90	46.73	55.84	57.85	46.49	06.67	34.39	10.43
20	51.94	25.41	58.46	35.04	59.89	47.13	55.61	58.22	46.06	06.86	33.96	10.43
21	52.19	25.64	58.63	35.38	59.85	47.55	55.34	58.58	45.65	07.03	33.57	10.41
22	52.45	25.87	58.80	35.73	59.78	47.96	55.05	58.92	45.26	07.19	33.20	10.42
23	52.72	26.10	58.96	36.09	59.69	48.38	54.76	59.23	44.90	07.35	32.84	10.44
24	53.01	26.34	59.11	36.46	59.59	48.78	54.46	59.54	44.56	07.52	32.48	10.48
25	53.31	26.60	59.24	36.85	59.46	49.16	54.17	59.82	44.23	07.69	32.10	10.53
26	53.62	26.87	59.35	37.25	59.31	49.53	53.91	60.10	43.91	07.88	31.70	10.57
27	53.92	27.17	59.45	37.65	59.16	49.88	53.67	60.38	43.58	08.09	31.27	10.61
28	54.21	27.48	59.52	38.04	59.04	50.23	53.45	60.67	43.22	08.31	30.82	10.62
29	54.48	27.81	59.55	38.44	58.93	50.57	53.24	60.98	42.83	08.52	30.35	10.60
30	54.73	28.13	59.57	38.81	58.85	50.92	53.02	61.32	42.42	08.73	29.88	10.57
31	54.96	28.46	59.59	39.17	58.78	51.29	52.79	61.66	41.97	08.91	29.42	10.50
32	55.16	28.79	59.62	39.51			52.53	62.01			28.98	10.41

Catalogue Number 1468.

Spectrum Fo.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

o Octantis. Mag. 7.22

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m 00 II	^s 88° 46'	^h ^m 00 II	^s 88° 45'	^h ^m 00 II	^s 88° 45'	^h ^m 00 II	^s 88° 45'	^h ^m 00 II	^s 88° 45'	^h ^m 00 I2	^s 88° 45'
1	^s 75.10	["] 14.65	^s 47.60	["] 68.21	^s 32.18	["] 58.40	^s 29.79	["] 46.30	^s 40.81	["] 35.47	^s 03.33	["] 27.23
2	73.98	14.55	46.85	67.88	31.92	57.98	30.04	45.93	41.37	35.17	04.09	27.03
3	72.85	14.42	46.18	67.55	31.73	57.59	30.28	45.57	41.89	34.88	04.88	26.82
4	71.75	14.25	45.57	67.22	31.57	57.21	30.48	45.23	42.39	34.59	05.70	26.61
5	70.71	14.07	45.01	66.90	31.42	56.84	30.65	44.88	42.89	34.28	06.57	26.40
6	69.74	13.88	44.47	66.60	31.25	56.49	30.78	44.53	43.39	33.97	07.50	26.19
7	68.84	13.69	43.92	66.31	31.06	56.13	30.91	44.17	43.92	33.64	08.49	25.99
8	67.99	13.51	43.35	66.03	30.83	55.79	31.03	43.80	44.50	33.32	09.53	25.81
9	67.17	13.34	42.75	65.75	30.57	55.43	31.18	43.41	45.14	32.99	10.60	25.65
10	66.36	13.18	42.12	65.47	30.29	55.08	31.36	43.01	45.84	32.66	11.66	25.51
11	65.53	13.02	41.46	65.18	30.00	54.70	31.61	42.60	46.62	32.33	12.69	25.39
12	64.67	12.87	40.78	64.87	29.71	54.31	31.92	42.20	47.44	32.03	13.66	25.28
13	63.77	12.72	40.08	64.55	29.45	53.91	32.29	41.79	48.29	31.75	14.56	25.18
14	62.82	12.56	39.41	64.22	29.25	53.50	32.74	41.40	49.12	31.49	15.39	25.07
15	61.85	12.39	38.76	63.87	29.09	53.08	33.22	41.02	49.90	31.25	16.20	24.94
16	60.86	12.21	38.16	63.50	29.03	52.66	33.72	40.67	50.62	31.01	17.01	24.79
17	59.86	12.01	37.64	63.12	29.02	52.24	34.19	40.33	51.28	30.77	17.87	24.64
18	58.88	11.78	37.19	62.75	29.08	51.83	34.62	40.01	51.90	30.52	18.79	24.49
19	57.93	11.53	36.81	62.38	29.17	51.44	34.98	39.68	52.51	30.25	19.78	24.33
20	57.03	11.28	36.47	62.02	29.26	51.06	35.28	39.34	53.15	29.96	20.85	24.19
21	56.20	11.01	36.14	61.68	29.30	50.70	35.57	38.99	53.84	29.66	21.95	24.07
22	55.44	10.74	35.80	61.34	29.29	50.34	35.86	38.63	54.61	29.36	23.06	23.97
23	54.75	10.48	35.42	61.01	29.23	49.98	36.19	38.24	55.47	29.08	24.16	23.90
24	54.08	10.24	34.98	60.69	29.13	49.60	36.60	37.84	56.37	28.81	25.23	23.85
25	53.40	10.01	34.47	60.36	29.01	49.20	37.09	37.45	57.31	28.56	26.23	23.82
26	52.69	09.79	33.94	60.00	28.91	48.79	37.66	37.07	58.27	28.34	27.19	23.78
27	51.92	09.57	33.41	59.62	28.88	48.36	38.28	36.71	59.22	28.14	28.11	23.75
28	51.10	09.34	32.93	59.22	28.93	47.93	38.94	36.37	60.11	27.95	29.00	23.71
29	50.22	09.09	32.51	58.81	29.05	47.50	39.59	36.06	60.97	27.77	29.89	23.67
30	49.32	08.82	32.18	58.40	29.26	47.08	40.22	35.76	61.78	27.60	30.77	23.62
31	48.44	08.52			29.52	46.68	40.81	35.47	62.57	27.42	31.66	23.56
32	47.60	08.21			29.79	46.30			63.33	27.23		

Mean R.A. 00^h12^m16^s.902 Mean Dec. -88° 45' 47".86 Sec δ 46.333 Tan δ -46.322

APPARENT PLACES OF STARS, 1928.

249

AT UPPER TRANSIT AT GREENWICH.

o Octantis. Mag. 7.22

y.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m 00 12	[°] ['] 88 45	^h ^m 00 13	[°] ['] 88 45	^h ^m 00 13	[°] ['] 88 45	^h ^m 00 13	[°] ['] 88 45	^h ^m 00 12	[°] ['] 88 45	^h ^m 00 12	[°] ['] 88 45
1	^s 31.66	["] 23.56	^s 01.19	["] 24.99	^s 23.00	["] 31.40	^s 29.20	["] 40.70	^s 77.53	["] 49.33	^s 53.33	["] 54.05
2	32.61	23.49	02.18	25.12	23.51	31.71	28.96	41.00	76.93	49.51	52.52	54.11
3	33.60	23.43	03.17	25.26	23.93	32.02	28.71	41.29	76.37	49.70	51.69	54.19
4	34.65	23.38	04.14	25.43	24.25	32.32	28.49	41.56	75.84	49.91	50.82	54.28
5	35.75	23.34	05.05	25.62	24.52	32.61	28.32	41.81	75.30	50.13	49.90	54.37
6	36.88	23.33	05.88	25.82	24.77	32.88	28.21	42.08	74.74	50.37	48.90	54.46
7	38.01	23.33	06.62	26.01	25.04	33.13	28.14	42.35	74.11	50.62	47.84	54.53
8	39.11	23.36	07.30	26.20	25.34	33.37	28.06	42.64	73.41	50.86	46.76	54.59
9	40.14	23.40	07.93	26.37	25.70	33.61	27.98	42.96	72.65	51.10	45.65	54.63
10	41.11	23.44	08.56	26.53	26.12	33.86	27.85	43.29	71.82	51.33	44.53	54.64
11	41.99	23.49	09.23	26.68	26.56	34.13	27.66	43.62	70.95	51.54	43.45	54.65
12	42.83	23.52	09.96	26.83	26.99	34.42	27.37	43.95	70.06	51.73	42.39	54.64
13	43.66	23.54	10.74	26.97	27.40	34.73	27.02	44.27	69.17	51.90	41.37	54.61
14	44.50	23.55	11.58	27.12	27.76	35.05	26.62	44.60	68.28	52.06	40.41	54.57
15	45.39	23.55	12.44	27.30	28.04	35.39	26.17	44.91	67.43	52.21	39.49	54.54
16	46.35	23.54	13.28	27.51	28.25	35.73	25.70	45.20	66.62	52.35	38.62	54.51
17	47.38	23.55	14.10	27.74	28.39	36.06	25.23	45.46	65.85	52.48	37.75	54.50
18	48.46	23.58	14.85	27.99	28.48	36.38	24.77	45.73	65.11	52.62	36.86	54.49
19	49.54	23.63	15.53	28.25	28.53	36.70	24.34	45.98	64.40	52.76	35.93	54.49
20	50.61	23.71	16.15	28.50	28.57	36.99	23.95	46.23	63.68	52.91	34.93	54.49
21	51.66	23.81	16.71	28.76	28.62	37.28	23.59	46.48	62.91	53.08	33.86	54.47
22	52.64	23.93	17.23	29.01	28.68	37.56	23.27	46.74	62.08	53.25	32.73	54.43
23	53.56	24.05	17.73	29.25	28.77	37.84	22.93	47.01	61.17	53.42	31.57	54.36
24	54.43	24.17	18.24	29.48	^{28.99} ^{29.06}	^{38.12} ^{38.40}	22.57	47.29	60.18	53.58	30.42	54.27
25	55.25	24.29	18.75	29.70	29.24	38.70	22.15	47.59	59.13	53.70	29.30	54.16
26	56.05	24.40	19.29	29.92	29.41	39.02	21.65	47.89	58.06	53.80	28.26	54.03
27	56.84	24.50	19.86	30.13	29.53	39.35	21.06	48.18	57.01	53.87	27.30	53.89
28	57.64	24.60	20.48	30.35	29.57	39.69	20.40	48.46	55.99	53.93	26.42	53.76
29	58.47	24.70	21.13	30.59	29.53	40.04	19.68	48.71	55.04	53.97	25.57	53.64
30	59.33	24.79	21.78	30.85	29.39	40.38	18.93	48.93	54.16	54.00	24.72	53.53
31	60.23	24.89	22.41	31.12	29.20	40.70	18.20	49.13	53.33	54.05	23.86	53.44
32	61.19	24.99	23.00	31.40			17.53	49.33			22.95	53.36

Catalogue Number 13.

Spectrum Ao.

(12961)

(NAUTICAL ALMANAC, 1928)

s

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

9 B Octantis. Mag. 7.76												
Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m 02 31	[°] ['] 86 02	^h ^m 02 31	[°] ['] 86 02	^h ^m 02 31	[°] ['] 86 02	^h ^m 02 30	[°] ['] 86 02	^h ^m 02 30	[°] ['] 86 02	^h ^m 02 31	[°] ['] 86 04
1	^s 29.18	" 44.39	^s 18.82	" 44.43	^s 09.59	" 39.37	^s 62.44	" 29.95	^s 59.48	" 18.99	^s 01.01	" 67.96
2	28.85	44.52	18.44	44.31	09.30	39.09	62.30	29.60	59.47	18.65	01.11	67.65
3	28.50	44.62	18.09	44.17	09.04	38.80	62.17	29.27	59.45	18.31	01.21	67.35
4	28.14	44.70	17.77	44.01	08.80	38.52	62.04	28.95	59.42	17.97	01.32	67.04
5	27.79	44.76	17.46	43.85	08.55	38.25	61.89	28.64	59.38	17.62	01.44	66.67
6	27.45	44.80	17.15	43.71	08.31	37.99	61.73	28.32	59.35	17.27	01.59	66.32
7	27.13	44.82	16.86	43.58	08.07	37.75	61.57	28.00	59.32	16.90	01.75	65.96
8	26.81	44.83	16.56	43.46	07.82	37.51	61.39	27.67	59.30	16.52	01.93	65.61
9	26.51	44.84	16.25	43.35	07.56	37.27	61.22	27.33	59.29	16.13	02.13	65.28
10	26.21	44.88	15.93	43.24	07.29	37.02	61.06	26.97	59.31	15.73	02.33	64.97
11	25.93	44.92	15.60	43.13	07.01	36.77	60.91	26.58	59.35	15.32	02.53	64.68
12	25.63	44.97	15.27	43.02	06.74	36.52	60.78	26.19	59.41	14.92	02.72	64.40
13	25.31	45.01	14.91	42.89	06.46	36.24	60.67	25.79	59.47	14.54	02.90	64.14
14	24.98	45.06	14.56	42.74	06.19	35.93	60.58	25.38	59.54	14.17	03.06	63.89
15	24.65	45.11	14.21	42.58	05.92	35.62	60.50	24.98	59.61	13.82	03.22	63.63
16	24.31	45.15	13.87	42.40	05.67	35.29	60.43	24.60	59.67	13.48	03.37	63.35
17	23.94	45.18	13.53	42.19	05.44	34.95	60.36	24.24	59.71	13.15	03.52	63.06
18	23.58	45.18	13.22	41.96	05.24	34.61	60.29	23.89	59.75	12.82	03.69	62.75
19	23.21	45.16	12.93	41.73	05.05	34.27	60.20	23.55	59.77	12.48	03.87	62.44
20	22.85	45.12	12.64	41.51	04.87	33.95	60.10	23.22	59.78	12.12	04.07	62.13
21	22.51	45.06	12.36	41.29	04.68	33.64	59.99	22.87	59.81	11.75	04.30	61.82
22	22.18	44.99	12.10	41.08	04.47	33.35	59.88	22.51	59.87	11.37	04.55	61.54
23	21.86	44.92	11.82	40.89	04.26	33.06	59.77	22.14	59.94	10.97	04.81	61.27
24	21.55	44.84	11.53	40.71	04.03	32.76	59.67	21.74	60.03	10.58	05.06	61.03
25	21.25	44.78	11.22	40.53	03.79	32.46	59.59	21.32	60.15	10.20	05.30	60.80
26	20.94	44.74	10.89	40.34	03.55	32.15	59.53	20.91	60.29	09.84	05.54	60.60
27	20.62	44.71	10.56	40.13	03.32	31.81	59.50	20.50	60.43	09.49	05.76	60.40
28	20.29	44.68	10.23	39.90	03.11	31.44	59.49	20.10	60.56	09.16	05.97	60.20
29	19.94	44.64	09.90	39.64	02.91	31.06	59.49	19.71	60.69	08.85	06.19	60.00
30	19.57	44.59	09.59	39.37	02.74	30.68	59.48	19.35	60.80	08.55	06.40	59.78
31	19.19	44.52			02.59	30.31	59.48	18.99	60.91	08.26	06.62	59.57
32	18.82	44.43			02.44	29.95			61.01	07.96		

Mean R.A. 02^h 31^m 15^s.697 Mean Dec. — 86° 02' 22".21 Sec δ 14.478 Tan δ — 14.444

APPARENT PLACES OF STARS, 1928.

251

AT UPPER TRANSIT AT GREENWICH.

9 B Octantis. Mag. 7.76

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 02 31 02 31	[°] ['] ["] 86 01 86 01	^h ^m ^s 02 31 02 31	[°] ['] ["] 86 01 86 01	^h ^m ^s 02 31 02 31	[°] ['] ["] 86 01 86 01	^h ^m ^s 02 31 02 31	[°] ['] ["] 86 02 86 02	^h ^m ^s 02 31 02 31	[°] ['] ["] 86 02 86 02	^h ^m ^s 02 31 02 31	[°] ['] ["] 86 02 86 02
1	06.62	59.57	15.33	55.18	24.66	56.38	31.33	02.60	33.36	12.27	29.88	20.83
2	06.85	59.35	15.66	55.09	24.96	56.53	31.47	02.91	33.28	12.54	29.71	21.05
3	07.09	59.10	16.00	55.03	25.24	56.71	31.58	03.20	33.25	12.81	29.55	21.28
4	07.34	58.86	16.35	54.99	25.50	56.89	31.67	03.49	33.23	13.08	29.37	21.51
5	07.61	58.62	16.68	54.97	25.73	57.07	31.77	03.76	33.22	13.38	29.18	21.76
6	07.90	58.39	17.01	54.97	25.94	57.25	31.88	04.01	33.21	13.69	28.97	22.02
7	08.20	58.18	17.32	54.99	26.15	57.41	32.00	04.25	33.18	14.01	28.75	22.28
8	08.51	58.00	17.60	55.02	26.37	57.55	32.13	04.49	33.13	14.34	28.50	22.53
9	08.80	57.84	17.87	55.05	26.61	57.68	32.28	04.74	33.07	14.68	28.25	22.77
10	09.08	57.70	18.13	55.06	26.86	57.82	32.43	05.01	32.98	15.03	27.98	23.01
11	09.35	57.56	18.40	55.05	27.13	57.96	32.58	05.30	32.88	15.36	27.71	23.22
12	09.59	57.43	18.68	55.03	27.41	58.12	32.71	05.62	32.77	15.70	27.44	23.41
13	09.83	57.29	18.97	55.01	27.69	58.30	32.82	05.95	32.64	16.02	27.18	23.58.
14	10.06	57.14	19.28	54.98	27.95	58.49	32.91	06.29	32.51	16.31	26.92	23.74
15	10.30	56.96	19.62	54.97	28.20	58.71	32.98	06.64	32.38	16.59	26.67	23.89
16	10.56	56.76	19.95	54.99	28.44	58.96	33.04	06.97	32.26	16.85	26.44	24.04
17	10.84	56.58	20.29	55.03	28.66	59.21	33.08	07.30	32.14	17.12	26.22	24.19
18	11.15	56.42	20.62	55.09	28.86	59.46	33.12	07.62	32.03	17.38	25.99	24.36
19	11.47	56.27	20.94	55.17	29.05	59.71	33.15	07.92	31.92	17.63	25.75	24.53
20	11.79	56.12	21.24	55.27	29.23	59.95	33.18	08.21	31.83	17.90	25.49	24.72
21	12.13	56.00	21.52	55.37	29.41	60.19	33.23	08.49	31.73	18.18	25.21	24.91
22	12.45	55.91	21.80	55.47	29.58	60.41	33.28	08.76	31.61	18.48	24.91	25.09
23	12.75	55.84	22.06	55.57	29.77	60.62	33.34	09.04	31.47	18.79	24.58	25.27
24	13.05	55.78	22.32	55.67	29.96	60.83	33.41	09.33	31.30	19.10	24.24	25.42
25	13.34	55.72	22.59	55.76	30.17	61.04	33.47	09.64	31.11	19.42	23.91	25.54
26	13.61	55.66	22.86	55.84	30.39	61.25	33.52	09.96	30.90	19.71	23.59	25.62
27	13.88	55.60	23.14	55.91	30.60	61.48	33.55	10.30	30.67	19.97	23.28	25.70
28	14.15	55.53	23.42	55.97	30.81	61.73	33.56	10.66	30.45	20.21	22.99	25.76
29	14.43	55.45	23.72	56.04	31.01	62.00	{33.54} {33.53}	{11.02} {11.36}	30.25	20.43	22.71	25.83
30	14.71	55.36	24.03	56.14	31.18	62.29	33.49	11.69	30.06	20.63	22.44	25.91
31	15.02	55.27	24.35	56.25	31.33	62.60	33.43	11.99	29.88	20.83	22.17	26.00
32	15.33	55.18	24.66	56.38			33.36	12.27			21.89	26.10

Catalogue Number 149

Spectrum Fo.

(12961)

S 2

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

10 B Octantis. Mag. 8.35												
Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m 02 48	[°] ['] 88 27	^h ^m 02 48	[°] ['] 88 27	^h ^m 02 48	[°] ['] 88 27	^h ^m 02 47	[°] ['] 88 27	^h ^m 02 47	[°] ['] 88 27	^h ^m 02 47	[°] ['] 88 27
1	^s 74.57	["] 58.72	^s 47.32	["] 59.43	^s 22.30	["] 55.04	^s 61.89	["] 46.18	^s 51.98	["] 35.55	^s 53.51	["] 24.57
2	73.71	58.87	46.33	59.34	21.50	54.77	61.48	45.85	51.88	35.21	53.70	24.25
3	72.80	59.01	45.39	59.23	20.75	54.51	61.08	45.52	51.76	34.87	53.88	23.94
4	71.87	59.12	44.51	59.10	20.05	54.25	60.66	45.22	51.62	34.54	54.08	23.61
5	70.94	59.20	43.67	58.97	19.38	53.99	60.21	44.91	51.47	34.22	54.31	23.28
6	70.03	59.26	42.86	58.85	18.72	53.75	59.74	44.60	51.29	33.87	54.57	22.93
7	69.17	59.30	42.07	58.74	18.05	53.53	59.26	44.30	51.13	33.50	54.89	22.58
8	68.36	59.33	41.27	58.64	17.36	53.31	58.76	43.98	51.00	33.12	55.28	22.22
9	67.59	59.37	40.45	58.54	16.65	53.09	58.25	43.66	50.89	32.73	55.70	21.88
10	66.82	59.41	39.60	58.45	15.91	52.87	57.76	43.31	50.83	32.33	56.16	21.56
11	66.07	59.47	38.73	58.37	15.14	52.64	57.28	42.95	50.83	31.93	56.62	21.26
12	65.29	59.53	37.82	58.28	14.35	52.39	56.84	42.57	50.89	31.53	57.06	20.97
13	64.49	59.59	36.89	58.17	13.57	52.13	56.46	42.18	50.97	31.15	57.46	20.70
14	63.65	59.66	35.94	58.05	12.80	51.86	56.13	41.79	51.09	30.79	57.82	20.44
15	62.78	59.73	35.09	57.91	12.05	51.56	55.85	41.40	51.21	30.43	58.14	20.17
16	61.87	59.79	34.05	57.75	11.34	51.25	55.61	41.02	51.29	30.09	58.43	19.89
17	60.93	59.84	33.14	57.56	10.68	50.93	55.37	40.66	51.33	29.77	58.73	19.59
18	59.97	59.87	32.27	57.36	10.08	50.60	55.13	40.32	51.33	29.45	59.07	19.29
19	59.00	59.88	31.44	57.15	09.52	50.28	54.84	39.99	51.30	29.11	59.47	18.97
20	58.03	59.86	30.65	56.94	08.98	49.98	54.51	39.67	51.27	28.76	59.93	18.65
21	57.10	59.83	29.91	56.74	08.44	49.69	54.14	39.34	51.25	28.40	60.45	18.34
22	56.22	59.78	29.18	56.56	07.88	49.41	53.75	38.99	51.28	28.01	61.02	18.05
23	55.38	59.74	28.42	56.39	07.26	49.14	53.37	38.63	51.38	27.62	61.61	17.77
24	54.57	59.69	27.62	56.23	06.61	48.87	53.03	38.25	51.54	27.23	62.20	17.51
25	53.77	59.64	26.78	56.07	05.92	48.59	52.74	37.84	51.76	26.84	62.78	17.27
26	52.98	59.61	25.90	55.91	05.22	48.28	52.51	37.43	52.02	26.47	63.34	17.05
27	52.15	59.59	24.98	55.72	04.54	47.96	52.34	37.02	52.30	26.12	63.87	16.84
28	51.27	59.58	24.05	55.52	03.90	47.62	52.22	36.62	52.59	25.79	64.38	16.63
29	50.33	59.57	23.15	55.29	03.30	47.26	52.14	36.24	52.85	25.48	64.87	16.42
30	49.34	59.54	22.30	55.04	02.78	46.89	52.07	35.89	53.09	25.18	65.35	16.19
31	48.33	59.50			02.31	46.53	51.98	35.55	53.30	24.87	65.84	15.96
32	47.32	59.43			01.89	46.18			53.51	24.57		

Mean R.A. 02^h 48^m 34^s.162 Mean Dec. — 88° 27' 37".78 Sec δ 37.221 Tan δ — 37.208

APPARENT PLACES OF STARS, 1928.

253

AT UPPER TRANSIT AT GREENWICH.

10 B Octantis. Mag. 8.35

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 02 48 88° 27'		^h ^m ^s 02 48 88° 27'		^h ^m ^s 02 48 88° 27'		^h ^m ^s 02 49 88° 27'		^h ^m ^s 02 49 88° 27'		^h ^m ^s 02 48 88° 27'	
1	05.84	15.96	26.82	11.10	50.56	11.70	08.53	17.42	15.16	26.59	67.29	35.57
2	06.34	15.72	27.64	10.99	51.35	11.83	08.91	17.72	15.04	26.88	66.89	35.78
3	06.88	15.48	28.48	10.91	52.08	11.99	09.23	18.01	^(14.93) ^(14.90)	^(26.16) ^(26.12)	66.49	36.01
4	07.46	15.23	29.35	10.84	52.76	12.17	09.51	18.28	14.90	27.69	66.08	36.26
5	08.10	14.97	30.22	10.80	53.38	12.34	09.79	18.54	14.91	27.97	65.63	36.52
6	08.79	14.73	31.04	10.79	53.94	12.49	10.09	18.78	14.91	28.27	65.14	36.80
7	09.51	14.50	31.82	10.79	54.50	12.63	10.43	19.01	14.90	28.60	64.60	37.09
8	10.25	14.30	32.54	10.80	55.07	12.76	10.82	19.24	14.84	28.94	64.01	37.36
9	10.97	14.11	33.22	10.81	55.68	12.87	11.24	19.48	14.74	29.29	63.37	37.62
10	11.65	13.95	33.87	10.80	56.33	12.99	11.66	19.74	14.57	29.63	62.71	37.86
11	12.29	13.80	34.52	10.78	57.03	13.12	12.08	20.02	14.35	29.97	62.03	38.08
12	12.87	13.66	35.20	10.75	57.76	13.26	12.47	20.32	14.10	30.31	61.35	38.28
13	13.44	13.52	35.93	10.71	58.49	13.42	12.81	20.64	13.82	30.62	60.68	38.47
14	13.98	13.36	36.72	10.67	59.22	13.60	13.11	20.97	13.52	30.92	60.02	38.64
15	14.54	13.18	37.55	10.64	59.92	13.81	13.34	21.30	13.21	31.21	59.40	38.81
16	15.15	12.98	38.39	10.63	60.57	14.02	13.54	21.63	12.93	31.49	58.82	38.98
17	15.82	12.77	39.26	10.64	61.17	14.25	13.70	21.95	12.66	31.76	58.24	39.15
18	16.55	12.58	40.12	10.68	61.73	14.48	13.83	22.27	12.42	32.01	57.67	39.32
19	17.32	12.41	40.94	10.75	62.25	14.71	13.96	22.57	12.20	32.28	57.08	39.51
20	18.13	12.25	41.73	10.83	62.74	14.94	14.09	22.85	11.99	32.55	56.45	39.71
21	18.93	12.11	42.48	10.91	63.22	15.16	14.23	23.13	11.76	32.84	55.75	39.92
22	19.73	12.00	43.20	10.99	63.70	15.37	14.41	23.41	11.51	33.14	55.00	40.13
23	20.50	11.91	43.88	11.07	64.19	15.57	14.60	23.67	11.19	33.46	54.17	40.33
24	21.23	11.82	44.55	11.14	64.71	15.76	14.81	23.95	10.80	33.78	53.31	40.49
25	21.94	11.75	45.22	11.21	65.26	15.95	15.03	24.25	10.34	34.10	52.44	40.63
26	22.63	11.67	45.90	11.27	65.83	16.14	15.22	24.57	09.83	34.40	51.58	40.74
27	23.29	11.60	46.60	11.33	66.43	16.36	15.37	24.90	09.29	34.67	50.77	40.84
28	23.95	11.52	47.33	11.38	67.01	16.60	15.45	25.25	08.74	34.92	50.01	40.92
29	24.62	11.42	48.11	11.43	67.57	16.86	15.45	25.61	08.21	35.15	49.29	41.01
30	25.32	11.32	48.92	11.50	68.08	17.13	15.39	25.95	07.73	35.36	48.59	41.10
31	26.05	11.21	49.74	11.59	68.53	17.42	15.29	26.27	07.29	35.57	47.90	41.20
32	26.82	11.10	50.56	11.70			15.16	26.59			47.20	41.32

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

31 G Mensæ. Mag. 6.24

Day	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m	^o [']	^h ^m	^o [']	^h ^m	^o [']	^h ^m	^o [']	^h ^m	^o [']	^h ^m	^o [']
	05 44	84 49	05 44	84 49	05 44	84 49	05 43	84 49	05 43	84 49	05 43	84 49
	^s	["]	^s	["]	^s	["]	^s	["]	^s	["]	^s	["]
1	25.29	37.04	20.01	45.43	12.55	49.43	63.80	48.80	56.40	43.85	51.36	35.39
2	25.18	37.39	19.77	45.64	12.25	49.47	63.53	48.67	56.21	43.63	51.25	35.11
3	25.06	37.74	19.52	45.83	11.96	49.49	63.28	48.55	56.01	43.42	51.14	34.82
4	24.92	38.08	19.27	46.00	11.68	49.50	63.03	48.44	55.81	43.23	51.04	34.52
5	24.78	38.41	19.03	46.15	11.41	49.51	62.78	48.35	55.61	43.03	50.92	34.20
6	24.62	38.71	18.80	46.29	11.15	49.52	62.53	48.26	55.41	42.82	50.81	33.87
7	24.47	38.99	18.57	46.44	10.89	49.54	62.27	48.18	55.20	42.60	50.71	33.53
8	24.33	39.25	18.35	46.60	10.63	49.58	62.01	48.09	54.98	42.36	50.63	33.16
9	24.19	39.51	18.13	46.76	10.36	49.63	61.73	47.99	54.77	42.11	50.55	32.78
10	24.06	39.77	17.91	46.94	10.09	49.68	61.46	47.88	54.58	41.83	50.50	32.42
11	23.93	40.04	17.68	47.12	09.81	49.73	61.18	47.74	54.38	41.54	50.45	32.07
12	23.80	40.30	17.44	47.32	09.53	49.78	60.90	47.59	54.20	41.24	50.40	31.74
13	23.66	40.58	17.19	47.51	09.23	49.81	60.63	47.42	54.03	40.92	50.36	31.43
14	23.52	40.88	16.92	47.69	08.93	49.82	60.37	47.22	53.86	40.61	50.31	31.14
15	23.37	41.19	16.65	47.87	08.63	49.82	60.12	47.01	53.71	40.33	50.25	30.85
16	23.21	41.50	16.38	48.02	08.32	49.79	59.88	46.81	53.56	40.06	50.18	30.57
17	23.04	41.81	16.10	48.15	08.03	49.74	59.65	46.63	53.41	39.81	50.11	30.25
18	22.86	42.10	15.81	48.26	07.74	49.68	59.42	46.46	53.26	39.57	50.04	29.92
19	22.66	42.38	15.54	48.34	07.46	49.61	59.19	46.30	53.09	39.33	49.99	29.57
20	22.46	42.64	15.27	48.42	07.18	49.55	58.96	46.16	52.91	39.09	49.93	29.20
21	22.25	42.89	15.02	48.49	06.92	49.49	58.72	46.01	52.74	38.82	49.89	28.83
22	22.05	43.11	14.77	48.57	06.66	49.45	58.46	45.86	52.56	38.53	49.88	28.45
23	21.86	43.32	14.52	48.67	06.39	49.43	58.21	45.71	52.39	38.22	49.87	28.09
24	21.66	43.52	14.27	48.78	06.12	49.42	57.94	45.52	52.23	37.90	49.88	27.74
25	21.47	43.73	14.00	48.90	05.83	49.40	57.69	45.31	52.10	37.56	49.90	27.40
26	21.29	43.93	13.74	49.03	05.53	49.38	57.44	45.09	51.98	37.21	49.91	27.07
27	21.10	44.15	13.45	49.15	05.23	49.33	57.20	44.84	51.87	36.87	49.92	26.75
28	20.91	44.39	13.16	49.27	04.92	49.26	56.99	44.57	51.76	36.55	49.93	26.46
29	20.71	44.66	12.86	49.36	04.62	49.16	56.79	44.32	51.66	36.24	49.93	26.17
30	20.49	44.93	12.55	49.43	04.34	49.05	56.59	44.08	51.56	35.94	49.93	25.87
31	20.25	45.19			04.06	48.92	56.40	43.85	51.47	35.66	49.93	25.56
32	20.01	45.43			03.80	48.80			51.36	35.39		

Mean R.A. 05^h 44^m 06^s.726 Mean Dec. - 84° 49' 33".33 Sec δ 11.089 Tan δ - 11.044

AT UPPER TRANSIT AT GREENWICH.

31 G Mensæ. Mag. 6.24

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 05 43 84 49	^h ^m ^s 05 43 84 49	^h ^m ^s 05 43 84 49	^h ^m ^s 05 43 84 49	^h ^m ^s 05 43 84 49	^h ^m ^s 05 43 84 49	^h ^m ^s 05 44 84 49	^h ^m ^s 05 44 84 49	^h ^m ^s 05 44 84 49	^h ^m ^s 05 44 84 49	^h ^m ^s 05 44 84 49	^h ^m ^s 05 44 84 49
1	49.93	25.56	52.29	16.02	57.97	09.72	04.92	08.88	11.17	13.81	14.24	22.50
2	49.94	25.24	52.43	15.72	58.21	09.60	05.15	08.99	11.30	14.06	14.27	22.79
3	49.95	24.91	52.58	15.41	58.45	09.50	05.38	09.11	11.44	14.29	14.30	23.08
4	49.95	24.56	52.75	15.11	58.68	09.44	05.58	09.23	11.57	14.50	14.34	23.37
5	49.97	24.19	52.92	14.85	58.90	09.39	05.78	09.33	11.71	14.70	14.38	23.69
6	50.01	23.82	53.09	14.61	59.12	09.34	05.98	09.41	11.87	14.92	14.43	24.01
7	50.07	23.45	53.26	14.38	59.32	09.28	06.19	09.49	12.04	15.15	14.46	24.36
8	50.13	23.09	53.43	14.18	59.52	09.21	06.39	09.55	12.20	15.39	14.49	24.72
9	50.19	22.75	53.58	13.98	59.73	09.12	06.61	09.62	12.35	15.66	14.50	25.08
10	50.26	22.44	53.73	13.79	59.93	09.02	06.84	09.70	12.50	15.94	14.50	25.46
11	50.34	22.16	53.87	13.58	60.15	08.92	07.08	09.80	12.64	16.25	14.48	25.84
12	50.40	21.89	54.01	13.37	60.38	08.82	07.32	09.92	12.78	16.57	14.46	26.20
13	50.45	21.62	54.17	13.14	60.63	08.74	07.55	10.06	12.90	16.90	14.44	26.55
14	50.50	21.33	54.32	12.88	60.88	08.67	07.78	10.22	13.01	17.21	14.40	26.89
15	50.54	21.03	54.50	12.62	61.14	08.62	08.00	10.40	13.11	17.52	14.36	27.20
16	50.58	20.71	54.69	12.37	61.39	08.60	08.21	10.59	13.20	17.83	14.32	27.51
17	50.64	20.38	54.89	12.14	61.63	08.61	08.42	10.78	13.29	18.12	^h ^m ^s 14.23	^h ^m ^s 27.60
18	50.72	20.03	55.10	11.94	61.88	08.63	08.61	10.96	13.38	18.40	14.22	^h ^m ^s 28.39
19	50.81	19.68	55.31	11.74	62.11	08.64	08.80	11.15	13.47	18.67	14.19	28.71
20	50.91	19.34	55.52	11.58	62.33	08.66	08.98	11.32	13.56	18.92	14.17	29.04
21	51.02	19.02	55.73	11.43	62.56	08.68	09.16	11.49	13.66	19.19	14.13	29.39
22	51.14	18.71	55.93	11.29	62.78	08.70	09.35	11.65	13.76	19.47	14.08	29.77
23	51.26	18.42	56.13	11.15	63.00	08.71	09.54	11.80	13.86	19.77	14.00	30.15
24	51.39	18.15	56.32	11.01	63.22	08.71	09.72	11.94	13.95	20.10	13.91	30.53
25	51.51	17.90	56.51	10.87	63.45	08.69	09.93	12.10	14.04	20.45	13.81	30.89
26	51.62	17.65	56.70	10.72	63.67	08.68	10.13	12.29	14.11	20.82	13.70	31.21
27	51.74	17.40	56.89	10.56	63.91	08.68	10.33	12.50	14.16	21.19	13.58	31.51
28	51.85	17.14	57.09	10.39	64.16	08.69	10.53	12.73	14.19	21.55	13.47	31.79
29	51.95	16.88	57.30	10.21	64.42	08.73	10.72	13.00	14.21	21.88	13.36	32.06
30	52.06	16.60	57.51	10.04	64.67	08.79	10.88	13.28	14.23	22.21	13.27	32.34
31	52.17	16.32	57.73	09.87	64.92	08.88	11.04	13.56	14.24	22.50	13.19	32.63
32	52.29	16.02	57.97	09.72			11.17	13.81			13.10	32.93

AT UPPER TRANSIT AT GREENWICH.

12 B Octantis. Mag. 6.74												
Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m 05 59	^s 85 56	^h ^m 05 58	^s 85 56	^h ^m 05 58	^s 85 56	^h ^m 05 58	^s 85 56	^h ^m 05 58	^s 85 56	^h ^m 05 58	^s 85 55
1	12.90	00.83	66.59	09.64	57.29	14.26	46.08	14.41	36.34	10.15	29.39	62.23
2	12.79	01.19	66.29	09.88	56.91	14.33	45.74	14.31	36.09	09.95	29.24	61.97
3	12.65	01.57	65.98	10.09	56.54	14.37	45.42	14.21	35.83	09.76	29.08	61.69
4	12.50	01.93	65.67	10.27	56.19	14.41	45.09	14.13	35.57	09.58	28.91	61.40
5	12.33	02.26	65.37	10.44	55.84	14.44	44.77	14.05	35.29	09.40	28.75	61.10
6	12.14	02.57	65.08	10.61	55.51	14.48	44.45	13.99	35.02	09.21	28.59	60.78
7	11.96	02.86	64.81	10.78	55.19	14.53	44.11	13.93	34.75	09.01	28.43	60.44
8	11.78	03.14	64.53	10.96	54.86	14.59	43.77	13.87	34.46	08.80	28.29	60.08
9	11.62	03.41	64.26	11.14	54.52	14.65	43.42	13.79	34.17	08.57	28.18	59.73
10	11.46	03.67	63.99	11.34	54.18	14.72	43.06	13.70	33.90	08.31	28.08	59.37
11	11.31	03.94	63.70	11.54	53.82	14.80	42.70	13.60	33.63	08.04	27.99	59.03
12	11.16	04.22	63.41	11.75	53.46	14.87	42.33	13.47	33.38	07.76	27.92	58.71
13	11.01	04.51	63.11	11.96	53.08	14.93	41.97	13.31	33.14	07.46	27.85	58.41
14	10.84	04.82	62.79	12.17	52.69	14.98	41.62	13.14	32.92	07.17	27.76	58.12
15	10.66	05.14	62.45	12.37	52.31	15.00	41.29	12.97	32.70	06.90	27.67	57.85
16	10.48	05.46	62.11	12.54	51.92	15.00	40.97	12.79	32.50	06.65	27.58	57.57
17	10.28	05.78	61.75	12.70	51.53	14.98	40.66	12.62	32.29	06.42	27.47	57.27
18	10.06	06.10	61.40	12.83	51.16	14.94	40.37	12.48	32.08	06.20	27.36	56.95
19	09.82	06.40	61.05	12.93	50.81	14.89	40.07	12.35	31.85	05.98	27.25	56.61
20	09.57	06.67	60.71	13.02	50.46	14.84	39.76	12.22	31.61	05.75	27.15	56.25
21	09.32	06.93	60.39	13.12	50.12	14.82	39.44	12.10	31.36	05.50	27.08	55.88
22	09.07	07.16	60.07	13.22	49.79	14.80	39.11	11.97	31.11	05.22	27.04	55.51
23	08.83	07.39	59.76	13.33	49.44	14.80	38.77	11.83	30.88	04.93	27.01	55.15
24	08.59	07.60	59.45	13.46	49.09	14.81	38.43	11.67	30.66	04.62	26.99	54.80
25	08.36	07.82	59.13	13.61	48.73	14.83	38.09	11.49	30.47	04.29	26.98	54.46
26	08.14	08.05	58.78	13.77	48.35	14.83	37.75	11.29	30.29	03.97	26.98	54.14
27	07.92	08.30	58.43	13.93	47.96	14.81	37.44	11.06	30.12	03.65	26.97	53.83
28	07.69	08.56	58.05	14.06	47.56	14.77	37.14	10.82	29.97	03.34	26.96	53.54
29	07.45	08.84	57.67	14.17	47.17	14.71	36.87	10.59	29.83	03.05	26.94	53.25
30	07.18	09.12	57.29	14.26	46.79	14.61	36.60	10.37	29.69	02.76	26.93	52.95
31	06.89	09.39			46.42	14.51	36.34	10.15	29.54	02.49	26.92	52.65
32	06.59	09.64			46.08	14.41			29.39	02.23		

Mean R.A. 05^h 58^m 48^s.856 Mean Dec. — 85° 55' 58".86 Sec δ 14.100 Tan δ — 14.064

APPARENT PLACES OF STARS, 1928.

257

AT UPPER TRANSIT AT GREENWICH.

12 B Octantis. Mag. 6.74												
Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m 05 58	^s 85 55	^h ^m 05 58	^s 85 55	^h ^m 05 58	^s 85 55	^h ^m 05 58	^s 85 55	^h ^m 05 58	^s 85 55	^h ^m 05 58	^s 85 55
1	26.92	52.65	29.27	43.02	36.03	36.31	44.74	34.89	52.90	39.28	57.22	47.68
2	26.89	52.33	29.42	42.70	36.33	36.18	45.05	34.98	53.08	39.51	57.26	47.97
3	26.87	52.00	29.58	42.38	36.62	36.06	45.33	35.08	53.26	39.73	57.32	48.24
4	26.86	51.65	29.77	42.08	36.91	35.97	45.60	35.18	53.44	39.93	57.38	48.52
5	26.87	51.28	29.97	41.80	37.19	35.90	45.86	35.27	53.64	40.12	57.46	48.82
6	26.89	50.90	30.18	41.54	37.46	35.83	46.11	35.34	53.84	40.32	57.53	49.14
7	26.93	50.54	30.39	41.30	37.71	35.76	46.37	35.40	54.05	40.53	57.59	49.48
8	26.98	50.18	30.58	41.09	37.95	35.67	46.64	35.44	54.27	40.76	57.64	49.85
9	27.05	49.85	30.77	40.89	38.20	35.57	46.91	35.49	54.49	41.02	57.68	50.21
10	27.12	49.53	30.94	40.70	38.46	35.45	47.20	35.55	54.70	41.29	57.70	50.58
11	27.19	49.25	31.11	40.49	38.73	35.33	47.52	35.62	54.89	41.59	57.70	50.96
12	27.26	48.98	31.27	40.26	39.02	35.21	47.83	35.72	55.08	41.89	57.69	51.32
13	27.31	48.70	31.44	40.02	39.32	35.10	48.14	35.85	55.25	42.20	57.67	51.67
14	27.34	48.41	31.64	39.76	39.64	35.02	48.43	35.99	55.40	42.50	57.63	52.01
15	27.38	48.12	31.84	39.48	39.96	34.95	48.72	36.15	55.54	42.81	57.59	52.33
16	27.41	47.80	32.06	39.21	40.28	34.91	49.00	36.32	55.67	43.10	57.56	52.63
17	27.46	47.47	32.29	38.97	40.59	34.90	49.27	36.49	55.80	43.39	57.52	52.93
18	27.53	47.11	32.54	38.74	40.91	34.89	49.53	36.66	55.92	43.66	57.50	53.22
19	27.62	46.75	32.80	38.53	41.20	34.89	49.77	36.83	56.05	43.91	57.48	53.52
20	27.72	46.41	33.06	38.35	41.49	34.89	50.00	36.99	56.18	44.16	57.46	53.83
21	27.84	46.08	33.31	38.19	41.77	34.90	50.24	37.14	56.32	44.42	^(57.41) ^(57.41)	^(53.87) ^(53.82)
22	27.98	45.77	33.56	38.03	42.05	34.90	50.48	37.29	56.46	44.69	57.37	54.90
23	28.12	45.48	33.80	37.88	42.31	34.89	50.72	37.42	56.60	44.98	57.30	55.29
24	28.25	45.20	34.03	37.73	42.58	34.87	50.98	37.55	56.74	45.30	57.20	55.67
25	28.39	44.93	34.26	37.57	42.87	34.83	51.24	37.69	56.86	45.64	57.07	56.03
26	28.52	44.68	34.49	37.41	43.16	34.80	51.51	37.86	56.97	46.00	56.94	56.37
27	28.64	44.42	34.71	37.23	43.47	34.78	51.78	38.05	57.05	46.36	56.81	56.69
28	28.77	44.16	34.94	37.05	43.78	34.77	52.04	38.27	57.11	46.72	56.68	56.97
29	28.89	43.89	35.19	36.85	44.11	34.79	52.28	38.52	57.15	47.06	56.57	57.25
30	29.01	43.61	35.45	36.65	44.43	34.83	52.51	38.77	57.18	47.38	56.46	57.54
31	29.14	43.32	35.73	36.47	44.74	34.89	52.71	39.02	57.22	47.68	56.36	57.83
32	29.27	43.02	36.03	36.31			52.90	39.28			56.27	58.13

Catalogue Number 374..

Spectrum Ko.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

A Octantis. Mag. 7.75

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 07 32 38° 38'		^h ^m ^s 07 31 38° 38'		^h ^m ^s 07 31 38° 38'		^h ^m ^s 07 30 38° 38'		^h ^m ^s 07 30 38° 38'		^h ^m ^s 07 30 38° 38'	
1	27.84	17.65	27.52	18.01	28.73	18.47	29.39	18.79	30.64	19.09	31.91	19.91
2	27.95	18.01	28.89	18.38	29.07	18.47	29.37	18.84	30.72	19.01	31.75	19.75
3	28.01	18.38	28.22	18.78	29.39	18.48	29.37	18.89	30.80	19.95	31.57	19.57
4	28.00	18.78	27.55	19.18	29.70	18.53	29.50	18.94	30.88	19.89	31.38	19.38
5	27.92	19.18	27.90	19.56	29.98	18.62	29.67	19.01	31.93	19.84	31.17	19.17
6	27.76	19.56	27.28	20.00	30.26	18.74	29.84	19.09	32.95	19.79	30.95	19.95
7	27.57	19.92	27.70	20.27	30.53	18.88	29.02	19.44	33.94	19.73	30.72	19.72
8	27.35	20.27	27.14	20.60	30.80	18.04	28.21	19.41	34.90	19.67	30.46	19.46
9	27.14	20.60	27.59	21.00	31.08	18.19	28.41	19.36	35.83	19.58	30.19	19.19
10	26.94	20.91	27.04	21.33	31.37	18.32	28.62	19.25	36.75	19.46	29.91	18.91
11	26.77	21.22	27.48	21.65	31.68	18.43	28.83	19.11	37.69	19.33	29.64	18.64
12	26.63	21.53	27.89	22.00	31.99	18.49	29.05	19.05	38.67	19.18	29.38	18.38
13	26.50	21.85	28.26	22.33	32.32	18.51	29.27	19.02	39.70	19.02	29.14	18.14
14	^h ^m ^s 26 41 38° 38'	^h ^m ^s 22 18 38° 38'	28.57	22.65	32.65	18.49	29.48	18.91	40.78	18.86	28.91	17.91
15	26.15	22.89	29.84	23.00	32.97	18.42	29.66	18.82	41.92	18.71	28.70	17.70
16	25.96	23.26	30.06	23.33	33.27	18.32	29.82	18.71	43.08	18.57	28.49	17.49
17	25.72	23.63	30.22	23.65	33.56	18.21	29.96	18.60	44.26	18.44	28.29	17.29
18	25.44	24.02	30.36	24.00	33.83	18.12	30.09	18.49	45.45	18.34	28.06	17.06
19	25.10	24.39	30.50	24.33	34.08	18.08	30.21	18.43	46.55	18.24	27.80	16.80
20	24.69	24.75	30.67	24.65	34.31	18.07	30.32	18.46	47.56	18.14	27.53	16.53
21	24.24	25.09	30.87	25.00	34.53	18.10	30.43	18.44	48.50	18.01	27.23	16.23
22	23.78	25.41	31.10	25.33	34.75	18.17	30.56	18.38	49.54	17.87	26.91	15.91
23	23.32	25.73	31.37	25.65	35.00	18.24	30.70	18.27	50.57	17.71	26.60	15.60
24	22.88	26.03	31.66	26.00	35.25	18.28	30.87	18.10	51.52	17.52	26.28	15.28
25	22.48	26.32	31.93	26.33	35.52	18.27	31.04	18.02	52.50	17.31	25.98	14.98
26	22.12	26.61	32.16	26.65	35.81	18.20	31.21	17.96	53.50	17.09	25.70	14.70
27	21.78	26.93	32.32	27.00	36.10	18.08	31.36	17.84	54.44	16.87	25.43	14.43
28	21.42	27.27	32.42	27.33	36.38	18.01	31.49	17.75	55.35	16.66	25.17	14.17
29	21.03	27.63	32.46	27.65	36.65	18.00	31.60	17.66	56.26	16.47	24.91	13.91
30	20.60	28.00	32.47	28.00	36.89	18.00	31.68	17.58	57.17	16.27	24.66	13.66
31	20.10	28.37				18.46	31.74	17.54	58.09	16.08	24.40	13.40
32	19.52	28.73				27.39	31.79	17.48	59.01	15.91		

Mean R.A. 07^h 31^m 18^s.032 Mean Dec. — 88° 38' 26" 72 Sec δ 42.157 Tan δ — 42.145

APPARENT PLACES OF STARS, 1928.

259

AT UPPER TRANSIT AT GREENWICH.

A Octantis. Mag. 7.75												
Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m	[°] [']	^h ^m	[°] [']	^h ^m	[°] [']	^h ^m	[°] [']	^h ^m	[°] [']	^h ^m	[°] [']
	07 30	88 38	07 30	88 38	07 30	88 38	07 30	88 38	07 31	88 38	07 31	88 38
1	09.84	30.40	05.47	20.83	16.54	12.05	38.71	07.23	05.37	07.91	25.61	13.85
2	09.41	30.13	05.53	20.48	17.22	11.79	39.63	07.18	06.08	08.05	26.00	14.10
3	08.98	29.83	05.65	20.12	17.93	11.57	40.51	07.15	06.76	08.18	26.44	14.34
4	08.54	29.52	05.84	19.78	18.64	11.37	41.33	07.14	07.44	08.30	26.91	14.58
5	08.12	29.19	06.08	19.44	19.32	11.19	42.10	07.12	08.16	08.40	27.41	14.82
6	07.76	28.86	06.38	19.13	19.95	11.01	42.84	07.09	08.92	08.50	27.94	15.07
7	07.47	28.52	06.70	18.84	20.55	10.85	43.58	07.04	09.73	08.61	28.47	15.35
8	07.24	28.18	07.01	18.57	21.11	10.69	44.34	06.98	10.57	08.72	28.98	15.65
9	07.07	27.85	07.29	18.31	21.65	10.50	45.14	06.91	11.44	08.86	29.47	15.98
10	06.94	27.54	07.53	18.06	22.20	10.30	46.00	06.84	12.31	09.02	29.91	16.31
11	06.82	27.24	07.73	17.80	22.80	10.09	46.91	06.79	13.16	09.21	30.29	16.65
12	06.68	26.97	07.91	17.53	23.46	09.86	47.88	06.75	13.98	09.42	30.62	16.98
13	06.49	26.70	08.08	17.24	24.18	09.64	48.86	06.72	14.75	09.63	30.90	17.32
14	06.25	26.44	08.29	16.94	24.96	09.43	49.83	06.72	15.48	09.84	31.14	17.65
15	06.00	26.16	08.56	16.62	25.77	09.23	50.80	06.74	16.17	10.06	31.35	17.96
16	05.73	25.87	08.89	16.29	26.61	09.05	51.74	06.78	16.81	10.28	31.54	18.26
17	05.47	25.56	09.28	15.97	27.45	08.90	52.64	06.84	17.42	10.49	31.74	18.54
18	05.25	25.23	09.73	15.66	28.29	08.78	53.51	06.89	18.01	10.69	31.98	18.83
19	05.09	24.87	10.21	15.37	29.10	08.66	54.34	06.95	18.61	10.86	32.24	19.11
20	05.01	24.52	10.72	15.10	29.89	08.55	55.13	07.01	19.21	11.04	32.52	19.40
21	05.00	24.17	11.24	14.84	30.65	08.44	55.91	07.05	19.85	11.22	32.82	19.72
22	05.03	23.82	11.75	14.59	31.39	08.33	56.68	07.08	20.53	11.42	33.12	20.06
23	05.09	23.50	12.24	14.35	32.10	08.21	57.48	07.11	21.25	11.63	33.37	20.43
24	05.17	23.19	12.71	14.13	32.80	08.08	58.31	07.13	21.96	11.86	33.55	20.80
25	05.26	22.90	13.16	13.90	33.51	07.94	59.18	07.15	22.65	12.11	33.64	21.19
26	05.34	22.60	13.58	13.66	34.26	07.79	60.09	07.18	23.31	12.40	33.67	21.58
27	05.40	22.32	14.00	13.41	35.06	07.64	61.04	07.25	23.89	12.70	33.64	21.95
28	05.44	22.05	14.42	13.15	35.92	07.50	62.00	07.34	24.39	13.01	33.57	22.29
29	05.46	21.76	14.87	12.89	36.83	07.39	62.93	07.46	24.83	13.31	33.50	22.62
30	05.46	21.47	15.36	12.61	37.77	07.30	63.81	07.60	25.23	13.58	33.45	22.93
31	05.45	21.16	15.92	12.32	38.71	07.23	64.62	07.75	25.61	13.85	33.44	23.24
32	05.47	20.83	16.54	12.05			65.37	07.91			33.48	23.54

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

10 G Octantis. Mag. 6.74												
Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 10 35 85 42	^h ^m ^s 10 35 85 42	^h ^m ^s 10 35 85 42	^h ^m ^s 10 35 85 42	^h ^m ^s 10 35 85 43	^h ^m ^s 10 35 85 43	^h ^m ^s 10 35 85 43	^h ^m ^s 10 35 85 43	^h ^m ^s 10 35 85 43	^h ^m ^s 10 35 85 43	^h ^m ^s 10 35 85 43	^h ^m ^s 10 35 85 43
1	34.38	40.69	39.70	50.44	40.59 {40.54}	02.50 {02.09}	36.97	13.42	30.35	21.66	21.76	25.84
2	34.64	40.92	39.81	50.86	40.46	02.50	36.77	13.71	30.11	21.84	21.50	25.90
3	34.90	41.18	39.91	51.28	40.37	02.88	36.58	14.00	29.88	22.03	21.23	25.97
4	35.16	41.47	39.98	51.69	40.28	03.25	36.41	14.29	29.65	22.22	20.95	26.04
5	35.40	41.78	40.03	52.07	40.19	03.61	36.25	14.59	29.41	22.43	20.66	26.09
6	35.63	42.10	40.07	52.43	40.11	03.95	36.09	14.89	29.18	22.64	20.34	26.14
7	35.83	42.41	40.12	52.78	40.04	04.30	35.92	15.21	28.93	22.85	20.02	26.17
8	36.00	42.71	40.16	53.13	39.99	04.65	35.76	15.53	28.66	23.06	19.69	26.19
9	36.17	43.00	40.21	53.47	39.93	05.00	35.59	15.86	28.37	23.27	19.36	26.18
10	36.33	43.28	40.28	53.81	39.87	05.37	35.40	16.19	28.08	23.46	19.05	26.15
11	36.50	43.55	40.35	54.16	39.82	05.76	35.19	16.52	27.78	23.63	18.75	26.11
12	36.68	43.82	40.42	54.52	39.76	06.16	34.97	16.85	27.46	23.78	18.48	26.07
13	36.86	44.08	40.49	54.90	39.68	06.56	34.73	17.15	27.15	23.91	18.21	26.05
14	37.04	44.35	40.56	55.29	39.59	06.97	34.48	17.44	26.85	24.04	17.96	26.03
15	37.24	44.63	40.63	55.70	39.49	07.37	34.22	17.70	26.57	24.15	17.71	26.03
16	37.45	44.93	40.68	56.12	39.36	07.76	33.97	17.95	26.30	24.26	17.46	26.04
17	37.65	45.25	40.70	56.54	39.20	08.14	33.74	18.19	26.04	24.39	17.19	26.06
18	37.84	45.58	40.71	56.96	39.05	08.50	33.52	18.44	25.80	24.53	16.91	26.06
19	38.03	45.92	40.71	57.37	38.90	08.85	33.32	18.69	25.56	24.69	16.61	26.05
20	38.20	46.28	40.68	57.77	38.75	09.18	33.12	18.95	25.29	24.86	16.29	26.01
21	38.35	46.65	40.64	58.15	38.61	09.51	32.92	19.23	25.01	25.02	15.97	25.96
22	38.48	47.02	40.61	58.51	38.49	09.84	32.73	19.52	24.72	25.17	15.66	25.88
23	38.59	47.38	40.59	58.86	38.38	10.18	32.51	19.82	24.40	25.30	15.36	25.78
24	38.69	47.72	40.58	59.21	38.28	10.54	32.27	20.12	24.07	25.40	15.08	25.67
25	38.78	48.04	40.59	59.57	38.18	10.92	32.00	20.40	23.75	25.49	14.81	25.56
26	38.89	48.35	40.61	59.95	38.06	11.31	31.73	20.66	23.43	25.56	14.56	25.45
27	39.01	48.66	40.63	60.35	37.92	11.70	31.44	20.89	23.12	25.61	14.31	25.34
28	39.14	48.97	40.63	60.78	37.75	12.08	31.16	21.10	22.83	25.65	14.07	25.25
29	39.28	49.31	40.62	61.22	37.57	12.44	30.87	21.30	22.55	25.68	13.83	25.16
30	39.43	49.67	{40.59} {40.54}	{61.66} {62.09}	37.37	12.79	30.61	21.48	22.27	25.73	13.60	25.08
31	39.57	50.05			37.17	13.12	30.35	21.66	22.01	25.78	13.36	25.00
32	39.70	50.44			36.97	13.42			21.76	25.84		

Mean R.A. 10^h 35^m 25^s.542 Mean Dec. — 85° 43' 04".95 Sec δ 13.393 Tan δ — 13.356

APPARENT PLACES OF STARS, 1928.

261

AT UPPER TRANSIT AT GREENWICH.

10 G Octantis. Mag. 6.74

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 10 35 85 43		^h ^m ^s 10 35 85 43		^h ^m ^s 10 35 85 43		^h ^m ^s 10 35 85 42		^h ^m ^s 10 35 85 42		^h ^m ^s 10 35 85 42	
1	^s 13.36	["] 25.00	^s 06.54	["] 19.37	^s 03.57	["] 10.36	^s 05.53	["] 61.37	^s 12.04	["] 55.20	^s 20.52	["] 54.43
2	13.10	24.92	06.34	19.11	03.57	10.01	05.71	61.12	12.30	55.13	20.77	54.51
3	12.83	24.83	06.15	18.83	03.58	09.68	05.90	60.89	12.54	55.04	21.02	54.58
4	12.54	24.72	05.97	18.54	03.62	09.36	06.07	60.67	12.77	54.94	21.28	54.63
5	12.26	24.59	05.81	18.24	03.66	09.06	06.24	60.46	13.00	54.84	21.56	54.68
6	11.97	24.43	05.68	17.95	03.70	08.79	06.39	60.25	13.24	54.73	21.85	54.74
7	11.69	24.26	05.58	17.66	03.73	08.54	06.53	60.03	13.50	54.61	22.16	54.82
8	11.42	24.08	05.48	17.39	03.75	08.28	06.67	59.79	13.76	54.48	22.46	54.91
9	11.18	23.89	05.38	17.14	03.76	08.01	06.80	59.54	14.04	54.36	22.77	55.02
10	10.96	23.72	05.28	16.91	03.76	07.71	06.95	59.27	14.33	54.26	23.10	55.15
11	10.76	23.55	05.17	16.68	03.75	07.39	07.12	59.00	14.64	54.19	23.41	55.30
12	10.56	23.40	05.05	16.44	03.76	07.06	07.31	58.73	14.97	54.13	23.71	55.47
13	10.37	23.26	04.92	16.19	03.78	06.73	07.51	58.48	15.28	54.10	23.99	55.64
14	10.16	23.12	04.78	15.91	03.82	06.39	07.74	58.23	15.59	54.07	24.26	55.81
15	09.93	22.99	04.64	15.61	03.88	06.06	07.97	58.00	15.89	54.06	24.51	55.99
16	09.70	22.85	04.51	15.31	03.96	05.73	08.21	57.80	16.18	54.06	24.75	56.15
17	09.45	22.69	04.39	14.99	04.06	05.41	08.45	57.61	16.46	54.05	24.99	56.31
18	09.19	22.51	04.29	14.66	04.16	05.10	08.68	57.43	16.72	54.04	25.23	56.45
19	08.94	22.30	04.21	14.32	04.26	04.81	08.91	57.27	16.98	54.03	25.47	56.59
20	08.70	22.07	04.15	14.00	04.37	04.54	09.13	57.11	17.23	54.00	25.73	56.75
21	08.47	21.84	04.10	13.69	04.48	04.28	09.33	56.94	17.49	53.97	26.00	56.91
22	08.27	21.59	04.06	13.39	04.58	04.00	09.53	56.77	17.76	53.94	26.29	57.09
23	08.09	21.34	04.03	13.11	04.67	03.74	09.72	56.58	18.06	53.91	26.58	57.29
24	07.91	21.10	04.01	12.83	04.75	03.47	09.92	56.39	18.37	53.90	26.88	57.52
25	07.75	20.88	03.96	12.56	04.83	03.19	10.13	56.19	18.70	53.92	27.16	57.78
26	07.59	20.66	03.91	12.28	04.90	02.90	10.37	55.99	19.03	53.96	27.42	58.05
27	07.43	20.45	03.85	11.99	04.98	02.59	10.62	55.81	19.36	54.04	27.65	58.32
28	07.27	20.24	03.78	11.69	05.08	02.27	10.89	55.64	19.67	54.14	27.87	58.58
29	07.11	20.04	03.72	11.38	05.21	01.95	11.18	55.49	19.97	54.24	28.07	58.83
30	06.93	19.83	03.65	11.05	05.36	01.65	11.47	55.37	20.26	54.34	28.27	59.07
31	06.74	19.61	03.60	10.71	05.53	01.37	11.76	55.27	20.52	54.43	28.47	59.30
32	06.54	19.37	03.57	10.36			12.04	55.20			28.68	59.51

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

η Octantis. Mag. 6.26												
Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 10 59 84 11	^h ^m ^s 11 00 84 12	^h ^m ^s 11 00 84 12	^h ^m ^s 11 00 84 12	^h ^m ^s 11 00 84 12	^h ^m ^s 11 00 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12
1	56.28	58.43	00.94	07.66	02.41	18.76	60.63	30.91	56.40	39.83	50.47	44.93
2	56.48	58.64	01.06	08.05	02.41	19.19	60.51	31.22	56.24	40.03	50.28	45.02
3	56.70	58.88	01.16	08.45	02.39	19.61	60.39	31.52	56.09	40.25	50.09	45.12
4	56.91	59.14	01.24	08.85	02.35	20.01	60.29	31.84	55.93	40.47	49.90	45.22
5	57.11	59.42	01.31	09.23	02.31	20.39	60.19	32.15	55.77	40.69	49.70	45.32
6	57.30	59.72	01.36	09.59	02.27	20.75	60.09	32.46	55.61	40.93	49.48	45.41
7	57.47	60.02	01.42	09.95	{02.21}	{21.10}	60.00	32.78	55.45	41.17	49.25	45.48
8	57.63	60.31	01.48	10.29	02.20	21.81	59.90	33.12	55.28	41.41	49.01	45.53
9	57.78	60.58	01.54	10.62	02.18	22.17	59.79	33.47	55.09	41.65	48.77	45.55
10	57.92	60.85	01.61	10.96	02.16	22.55	59.69	33.83	54.89	41.87	48.54	45.55
11	58.06	61.12	01.68	11.30	02.16	22.93	59.56	34.18	54.68	42.08	48.32	45.54
12	58.21	61.38	01.77	11.66	02.14	23.33	59.42	34.53	54.46	42.27	48.11	45.54
13	58.36	61.63	01.85	12.03	02.11	23.75	59.27	34.86	54.24	42.44	47.92	45.54
14	58.53	61.87	01.93	12.41	02.08	24.16	59.11	35.17	54.03	42.59	47.73	45.54
15	58.69	62.12	02.01	12.80	02.03	24.58	58.94	35.47	53.84	42.73	47.55	45.56
16	58.86	62.39	02.07	13.21	01.97	25.00	58.77	35.75	53.65	42.87	47.38	45.61
17	59.03	62.67	02.13	13.64	01.89	25.39	58.62	36.01	53.48	43.03	47.19	45.66
18	59.20	62.97	02.17	14.05	01.80	25.77	58.48	36.28	53.31	43.20	46.98	45.70
19	59.36	63.30	02.19	14.47	01.71	26.13	58.34	36.55	53.14	43.38	46.76	45.73
20	59.52	63.64	02.20	14.87	01.62	26.46	58.22	36.83	52.96	43.57	46.54	45.73
21	59.66	64.00	02.20	15.25	01.55	26.80	58.10	37.13	52.77	43.76	46.30	45.71
22	59.78	64.36	02.21	15.61	01.48	27.14	57.98	37.45	52.57	43.95	46.07	45.66
23	59.89	64.70	02.21	15.96	01.42	27.50	57.84	37.77	52.36	44.12	45.84	45.59
24	59.99	65.03	02.24	16.31	01.37	27.87	57.68	38.09	52.13	44.26	45.63	45.51
25	60.08	65.35	02.27	16.67	01.32	28.26	57.51	38.40	51.90	44.38	45.42	45.43
26	60.19	65.65	02.30	17.06	01.27	28.67	57.33	38.69	51.67	44.48	45.23	45.35
27	60.30	65.95	02.34	17.46	01.19	29.08	57.14	38.95	51.45	44.56	45.05	45.27
28	60.41	66.25	02.38	17.88	01.10	29.48	56.95	39.20	51.23	44.63	44.87	45.20
29	60.54	66.56	02.40	18.32	00.99	29.88	56.77	39.42	51.04	44.69	44.70	45.14
30	60.67	66.90	02.41	18.76	00.88	30.24	56.58	39.63	50.84	44.76	44.52	45.09
31	60.81	67.26			00.75	30.59	56.40	39.83	50.65	44.84	44.34	45.04
32	60.94	67.66			00.63	30.91			50.47	44.93		

Mean R.A. 10^h 59^m 51^s.747 Mean Dec. — 84° 12' 23".66 Sec δ 9.907 Tan δ — 9.856

APPARENT PLACES OF STARS, 1928.

263

AT UPPER TRANSIT AT GREENWICH.

η Octantis. Mag. 6.26

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12	^h ^m ^s 10 59 84 12
1	44.34	45.04	39.03	40.19	36.30	31.60	37.14	22.46	41.55	15.64	47.79	14.01
2	44.15	44.98	38.87	39.96	36.27	31.25	37.26	22.18	41.73	15.54	47.98	14.06
3	43.95	44.92	38.71	39.71	36.25	30.92	37.38	21.93	41.91	15.44	48.17	14.10
4	43.73	44.85	38.57	39.43	36.26	30.61	37.51	21.69	42.08	15.32	48.37	14.13
5	43.52	44.75	38.44	39.15	36.27	30.31	37.62	21.47	42.24	15.19	48.58	14.15
6	43.30	44.63	38.31	38.86	36.29	30.03	37.72	21.26	42.41	15.04	48.80	14.18
7	43.08	44.49	38.21	38.59	36.30	29.76	37.80	21.02	42.58	14.89	49.03	14.21
8	42.88	44.34	38.12	38.34	36.29	29.49	37.89	20.77	42.77	14.74	49.27	14.27
9	42.70	44.18	38.04	38.10	36.28	29.22	37.98	20.50	42.97	14.60	49.51	14.35
10	42.52	44.02	37.96	37.89	36.26	28.94	38.07	20.21	43.18	14.47	49.76	14.45
11	42.36	43.88	37.86	37.68	36.25	28.64	38.17	19.93	43.41	14.37	50.01	14.57
12	42.20	43.75	37.76	37.45	36.23	28.32	38.29	19.65	43.64	14.27	50.24	14.71
13	42.05	43.64	37.65	37.21	36.22	27.98	38.43	19.36	43.87	14.20	50.45	14.86
14	41.90	43.54	37.52	36.96	36.22	27.63	38.57	19.10	44.10	14.14	50.67	15.01
15	41.73	43.44	37.40	36.69	36.24	27.28	38.72	18.86	44.33	14.10	50.87	15.16
16	41.56	43.33	37.29	36.39	36.27	26.94	38.89	18.63	44.54	14.07	51.06	15.30
17	41.37	43.19	37.18	36.08	36.32	26.61	39.05	18.41	44.74	14.03	51.25	15.43
18	41.17	43.03	37.08	35.76	36.38	26.30	39.21	18.21	44.93	14.00	51.43	15.54
19	40.97	42.85	37.01	35.45	36.45	26.00	39.37	18.02	45.13	13.96	51.62	15.65
20	40.78	42.65	36.95	35.14	36.51	25.72	39.52	17.83	45.31	13.92	51.82	15.77
21	40.60	42.43	36.91	34.83	36.56	25.44	39.66	17.64	45.51	13.86	52.04	15.90
22	40.45	42.20	36.86	34.53	36.62	25.17	39.80	17.45	45.71	13.80	52.26	16.05
23	40.30	41.98	36.81	34.25	36.67	24.90	39.93	17.25	45.92	13.74	52.50	16.23
24	40.16	41.77	36.77	33.98	36.71	24.62	40.06	17.03	46.15	13.70	52.73	16.43
25	40.02	41.56	36.73	33.72	36.75	24.34	40.21	16.81	46.39	13.68	52.96	16.66
26	39.89	41.37	36.67	33.45	36.79	24.03	40.36	16.60	46.64	13.69	53.17	16.90
27	39.76	41.17	36.61	33.18	36.83	23.71	40.53	16.39	46.89	13.73	53.37	17.15
28	39.63	40.98	36.54	32.90	36.88	23.39	40.73	16.19	47.14	13.79	53.56	17.40
29	39.49	40.80	36.47	32.60	36.95	23.07	40.93	16.01	47.37	13.86	53.72	17.63
30	39.35	40.61	36.40	32.27	37.03	22.75	41.14	15.86	47.59	13.94	53.89	17.85
31	39.19	40.41	36.34	31.94	37.14	22.46	41.34	15.74	47.79	14.01	54.05	18.05
32	39.03	40.19	36.30	31.60			41.55	15.64			54.21	18.24

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

ρ Octantis. Mag. 5.66													
Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.		
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	
	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	^h ^m ^s 15 26 84 13	
1	10.78	29.25	18.25	27.19	25.62	30.06	32.27	37.36	36.35	46.90	37.55	57.60	
2	10.99	29.07	18.54	27.22	25.88	30.27	32.42	37.68	36.42	47.21	37.55	57.90	
3	11.23	28.89	18.82	27.28	26.13	30.49	32.57	37.97	36.49	47.52	37.55	58.21	
4	11.47	28.74	19.10	27.36	26.36	30.71	32.71	38.25	36.57	47.82	37.56	58.54	
5	11.73	28.61	19.35	27.44	26.56	30.91	32.86	38.51	36.65	48.12	37.55	58.88	
6	11.98	28.51	19.60	27.53	26.77	31.11	33.01	38.77	36.74	48.43	37.53	59.24	
7	12.24	28.42	19.83	27.60	26.97	31.31	33.18	39.03	36.83	48.75	37.49	59.60	
8	12.47	28.35	20.05	27.67	27.17	31.49	33.34	39.29	36.93	49.10	37.45	59.96	
9	12.70	28.28	20.28	27.72	27.38	31.66	33.52	39.56	37.02	49.45	37.38	60.29	
10	12.91	28.21	20.51	27.76	27.60	31.82	33.70	39.86	37.11	49.81	37.29	60.60	
11	13.11	28.12	20.75	27.80	27.83	31.99	33.89	40.17	37.18	50.20	37.21	60.90	
12	13.31	28.03	20.99	27.84	28.06	32.17	34.06	40.50	37.23	50.58	37.14	61.17	
13	13.52	27.91	21.26	27.88	28.31	32.37	34.23	40.84	37.27	50.96	37.07	61.44	
14	13.74	27.83	21.53	27.91	28.56	32.59	34.38	41.20	37.29	51.33	37.02	61.70	
15	13.96	27.71	21.80	28.01	28.81	32.82	34.51	41.55	37.31	51.99	36.99	61.97	
16	14.20	27.60	22.08	28.11	29.05	33.07	34.63	41.90	37.34	52.30	36.96	62.25	
17	14.45	27.51	22.37	28.24	29.27	33.35	34.74	42.23	37.38	52.60	36.93	62.56	
18	14.71	27.42	22.64	28.38	29.49	33.62	34.85	42.55	37.43	52.90	36.90	62.88	
19	14.98	27.36	22.91	28.53	29.69	33.89	34.95	42.85	37.49	53.22	36.85	63.20	
20	15.26	27.31	23.15	28.69	29.87	34.17	35.07	43.14	37.56	53.56	36.77	63.54	
21	15.52	27.29	23.38	28.85	30.05	34.43	35.20	43.43	37.63	53.91	36.68	63.86	
22	15.79	27.30	23.60	29.00	30.22	34.67	35.36	43.73	37.68	54.29	36.56	64.16	
23	16.01	27.32	23.82	29.13	30.41	34.90	35.51	44.04	37.70	54.68	36.44	64.43	
24	16.28	27.33	24.03	29.25	30.61	35.11	35.66	44.37	37.71	55.06	36.32	64.70	
25	16.50	27.34	24.27	29.35	30.82	35.33	35.82	44.72	37.70	55.43	36.21	64.95	
26	16.71	27.34	24.52	29.46	31.04	35.57	35.95	45.09	37.68	55.77	36.09	65.17	
27	16.93	27.32	24.78	29.57	31.27	35.83	36.06	45.48	37.65	56.11	35.98	65.39	
28	17.16	27.29	25.06	29.71	31.51	36.11	36.15	45.86	37.62	56.42	35.89	65.60	
29	17.41	27.24	25.34	29.87	31.73	36.41	36.22	46.22	37.59	56.72	35.80	65.83	
30	17.67	27.20	25.62	30.06	31.92	36.73	36.29	46.57	37.57	57.01	35.71	66.07	
31	17.96	27.18			32.11	37.05	36.35	46.90	37.56	57.30	35.63	66.32	
32	18.25	27.19			32.27	37.36			37.55	57.60			

Mean R.A. 15^h 26^m 25.018 Mean Dec. — 84° 13' 46".89 Sec δ 9.946 Tan δ — 9.896

APPARENT PLACES OF STARS, 1928.

265

AT UPPER TRANSIT AT GREENWICH.

ρ Octantis. Mag. 5.66												
Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ₁₅ ^m ₂₆	^o ₈₄ ['] ₁₄	^h ₁₅ ^m ₂₆	^o ₈₄ ['] ₁₄	^h ₁₅ ^m ₂₆	^o ₈₄ ['] ₁₄	^h ₁₅ ^m ₂₆	^o ₈₄ ['] ₁₃	^h ₁₅ ^m ₂₆	^o ₈₄ ['] ₁₃	^h ₁₅ ^m ₂₆	^o ₈₄ ['] ₁₃
1	^s _{35.63}	["] _{06.32}	^s _{30.97}	["] _{11.94}	^s _{24.89}	["] _{12.47}	^s _{19.78}	["] _{67.85}	^s _{17.42}	["] _{59.48}	^s _{18.90}	["] _{50.83}
2	_{35.53}	_{06.58}	_{30.76}	_{12.08}	_{24.67}	_{12.38}	_{19.67}	_{67.59}	_{17.44}	_{59.21}	_{19.00}	_{50.62}
3	_{35.43}	_{06.85}	_{30.55}	_{12.20}	_{24.47}	_{12.26}	_{19.57}	_{67.33}	_{17.45}	_{58.96}	_{19.10}	_{50.39}
4	_{35.32}	_{07.12}	_{30.33}	_{12.30}	_{24.29}	_{12.13}	_{19.48}	_{67.11}	_{17.44}	_{58.71}	_{19.19}	_{50.14}
5	_{35.18}	_{07.39}	_{30.11}	_{12.37}	_{24.12}	_{12.01}	_{19.40}	_{66.89}	_{17.43}	_{58.45}	_{19.28}	_{49.87}
6	_{35.04}	_{07.65}	_{29.90}	_{12.41}	_{23.96}	_{11.89}	_{19.31}	_{66.68}	_{17.40}	_{58.17}	_{19.38}	_{49.59}
7	_{34.88}	_{07.89}	_{29.71}	_{12.43}	_{23.81}	_{11.79}	_{19.20}	_{66.48}	_{17.37}	_{57.87}	_{19.49}	_{49.30}
8	_{34.71}	_{08.11}	_{29.53}	_{12.46}	_{23.67}	_{11.70}	_{19.07}	_{66.29}	_{17.35}	_{57.55}	_{19.62}	_{49.02}
9	_{34.54}	_{08.31}	_{29.37}	_{12.49}	_{23.50}	_{11.63}	_{18.94}	_{66.07}	_{17.34}	_{57.22}	_{19.77}	_{48.73}
10	_{34.40}	_{08.48}	_{29.22}	_{12.54}	_{23.32}	_{11.55}	_{18.81}	_{65.83}	_{17.34}	_{56.88}	_{19.94}	_{48.46}
11	_{34.26}	_{08.64}	_{29.07}	_{12.60}	_{23.13}	_{11.46}	_{18.67}	_{65.58}	_{17.36}	_{56.54}	_{20.11}	_{48.20}
12	_{34.14}	_{08.80}	_{28.90}	_{12.67}	_{22.93}	_{11.36}	_{18.54}	_{65.30}	_{17.40}	_{56.21}	_{20.28}	_{47.97}
13	_{34.02}	_{08.98}	_{28.72}	_{12.76}	_{22.72}	_{11.24}	_{18.42}	_{65.01}	_{17.45}	_{55.88}	_{20.45}	_{47.75}
14	_{33.91}	_{09.17}	_{28.53}	_{12.84}	_{22.51}	_{11.09}	_{18.32}	_{64.70}	_{17.51}	_{55.56}	_{20.63}	_{47.54}
15	_{33.80}	_{09.38}	_{28.31}	_{12.90}	_{22.31}	_{10.92}	_{18.23}	_{64.39}	_{17.58}	_{55.26}	_{20.80}	_{47.36}
16	_{33.68}	_{09.61}	_{28.10}	_{12.94}	_{22.12}	_{10.73}	_{18.16}	_{64.08}	_{17.65}	_{54.99}	_{20.96}	_{47.18}
17	_{33.54}	_{09.83}	_{27.87}	_{12.95}	_{21.95}	_{10.54}	_{18.10}	_{63.79}	_{17.71}	_{54.73}	_{21.11}	_{47.00}
18	_{33.37}	_{10.05}	_{27.64}	_{12.95}	_{21.79}	_{10.35}	_{18.05}	_{63.51}	_{17.76}	_{54.47}	_{21.25}	_{46.81}
19	_{33.19}	_{10.25}	_{27.42}	_{12.93}	_{21.63}	_{10.15}	_{17.99}	_{63.24}	_{17.81}	_{54.22}	_{21.39}	_{46.60}
20	_{33.00}	_{10.43}	_{27.21}	_{12.89}	_{21.48}	_{09.96}	_{17.94}	_{62.98}	_{17.85}	_{53.96}	_{21.54}	_{46.38}
21	_{32.81}	_{10.59}	_{27.01}	_{12.84}	_{21.35}	_{09.79}	_{17.89}	_{62.74}	_{17.89}	_{53.68}	_{21.70}	_{46.15}
22	_{32.62}	_{10.73}	_{26.83}	_{12.80}	_{21.21}	_{09.62}	_{17.83}	_{62.49}	_{17.92}	_{53.39}	_{21.89}	_{45.92}
23	_{32.43}	_{10.85}	_{26.65}	_{12.75}	_{21.08}	_{09.46}	_{17.76}	_{62.25}	_{17.97}	_{53.08}	_{22.09}	_{45.69}
24	_{32.25}	_{10.96}	_{26.47}	_{12.71}	_{20.92}	_{09.30}	_{17.68}	_{61.98}	_{18.04}	_{52.76}	_{22.31}	_{45.48}
25	_{32.08}	_{11.06}	_{26.31}	_{12.69}	_{20.77}	_{09.15}	_{17.59}	_{61.70}	_{18.12}	_{52.43}	_{22.54}	_{45.29}
26	_{31.93}	_{11.16}	_{26.13}	_{12.68}	_{20.60}	_{08.99}	_{17.51}	_{61.40}	_{18.23}	_{52.11}	_{22.78}	_{45.13}
27	_{31.78}	_{11.26}	_{25.96}	_{12.67}	_{20.42}	_{08.81}	_{17.45}	_{61.08}	_{18.36}	_{51.81}	_{23.02}	_{45.00}
28	_{31.62}	_{11.38}	_{25.76}	_{12.65}	_{20.25}	_{08.60}	_{17.40}	_{60.74}	_{18.50}	_{51.54}	_{23.24}	_{44.88}
29	_{31.48}	_{11.51}	_{25.56}	_{12.64}	_{20.08}	_{08.36}	_{17.38}	_{60.40}	_{18.64}	_{51.28}	_{23.45}	_{44.77}
30	_{31.32}	_{11.65}	_{25.33}	_{12.61}	_{19.92}	_{08.11}	_{17.38}	_{60.07}	_{18.78}	_{51.05}	_{23.64}	_{44.65}
31	_{31.15}	_{11.79}	_{25.11}	_{12.55}	_{19.78}	_{07.85}	_{17.40}	_{59.77}	_{18.90}	_{50.83}	_{23.82}	_{44.52}
32	_{30.97}	_{11.94}	_{24.89}	_{12.47}			_{17.42}	_{59.48}			_{24.00}	_{44.38}

Catalogue Number 935.

Spectrum A2.

(12961)

(NAUTICAL ALMANAC, 1928)

T

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

44 G Octantis. Mag. 6.32

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S	R.A.	Dec. S	R.A.	Dec S	R.A.	Dec. S	R.A.	Dec. S	R.A.	Dec. S.
	^h ^m ^s 19 42	[°] ['] ["] 81 32	^h ^m ^s 19 42	[°] ['] ["] 81 31	^h ^m ^s 19 42	[°] ['] ["] 81 31	^h ^m ^s 19 42	[°] ['] ["] 81 31	^h ^m ^s 19 42	[°] ['] ["] 81 31	^h ^m ^s 19 42	[°] ['] ["] 81 31
1	39.51	13.11	40.96	63.04	44.41	54.98	49.51	49.56	54.83	48.32	59.78	51.26
2	39.49	12.76	41.07	62.70	44.57	54.75	49.68	49.49	54.98	48.37	59.91	51.39
3	39.49	12.40	41.19	62.38	44.74	54.53	49.85	49.43	55.14	48.40	60.05	51.52
4	39.51	12.03	41.30	62.08	44.90	54.33	50.00	49.35	55.29	48.42	60.20	51.66
5	39.54	11.67	41.42	61.79	45.05	54.15	50.15	49.26	55.45	48.43	60.34	51.82
6	39.58	11.33	41.52	61.53	45.20	53.97	50.31	49.16	55.61	48.45	60.50	51.99
7	39.63	11.01	41.62	61.27	45.34	53.78	50.47	49.05	55.79	48.47	60.65	52.18
8	39.67	10.70	41.71	61.01	45.47	53.59	50.64	48.95	55.97	48.50	60.79	52.39
9	39.71	10.40	41.79	60.74	45.59	53.38	50.81	48.84	56.15	48.54	60.93	52.62
10	39.74	10.10	41.88	60.46	45.73	53.17	50.99	48.72	56.34	48.59	61.07	52.85
11	39.77	09.82	41.97	60.17	45.88	52.95	51.18	48.62	56.53	48.67	61.19	53.09
12	39.79	09.54	42.06	59.87	46.03	52.72	51.38	48.54	56.72	48.78	61.29	53.31
13	39.81	09.24	42.16	59.56	46.18	52.49	51.58	48.48	56.89	48.90	61.38	53.52
14	39.83	08.91	42.26	59.23	46.35	52.27	51.78	48.45	57.05	49.02	61.48	53.72
15	39.85	08.58	42.39	58.92	46.53	52.06	51.97	48.44	57.21	49.15	61.59	53.89
16	39.88	08.24	42.52	58.61	46.71	51.88	52.16	48.43	57.35	49.26	61.70	54.05
17	39.92	07.88	42.66	58.33	46.90	51.71	52.33	48.43	57.49	49.35	61.82	54.22
18	39.97	07.53	42.80	58.05	47.08	51.56	52.49	48.42	57.64	49.43	61.96	54.41
19	40.02	07.17	42.91	57.79	47.25	51.42	52.65	48.40	57.79	49.50	62.10	54.62
20	40.10	06.82	43.08	57.55	47.42	51.30	52.81	48.36	57.96	49.56	62.23	54.84
21	40.18	06.49	43.21	57.33	47.58	51.17	52.98	48.30	58.13	49.62	62.36	55.09
22	40.26	06.17	43.34	57.11	47.73	51.03	53.15	48.23	58.30	49.71	62.47	55.37
23	40.34	05.87	43.46	56.88	47.88	50.88	53.33	48.17	58.49	49.82	62.57	55.64
24	40.42	05.59	43.57	56.63	48.03	50.71	53.53	48.12	58.67	49.96	62.66	55.92
25	40.49	05.31	43.69	56.37	48.19	50.52	53.74	48.09	58.84	50.12	62.74	56.20
26	40.55	05.03	43.80	56.10	48.36	50.33	53.94	48.09	59.00	50.29	62.81	56.45
27	40.60	04.73	43.93	55.81	48.54	50.15	54.14	48.12	59.14	50.47	62.89	56.69
28	40.66	04.42	44.08	55.52	48.74	49.99	54.32	48.17	59.28	50.65	62.96	56.92
29	40.72	04.10	44.24	55.24	48.94	49.85	54.50	48.22	59.41	50.81	63.03	57.15
30	40.79	03.76	44.41	54.98	49.13	49.74	54.67	48.27	59.53	50.97	63.11	57.37
31	40.86	03.40			49.32	49.64	54.83	48.32	59.65	51.12	63.19	57.55
32	40.96	03.04			49.51	49.56			59.78	51.26		

Mean R.A. 19^h 42^m 51^s.713 Mean Dec. — 81° 32' 02".85 Sec δ 6.793 Tan δ — 6.719

APPARENT PLACES OF STARS, 1928.

267

AT UPPER TRANSIT AT GREENWICH.

44 G Octantis. Mag. 6.32

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m 19 43	[°] 81 31	^h ^m 19 43	[°] 81 32	^h ^m 19 42	[°] 81 32	^h ^m 19 42	[°] 81 32	^h ^m 19 42	[°] 81 32	^h ^m 19 42	[°] 81 32
1	^s 03.19	^s 57.59	^s 04.57	^s 06.57	^s 63.21	^s 15.00	^s 59.94	^s 20.02	^s 55.89	^s 20.00	^s 52.86	^s 15.01
2	03.28	57.82	04.58	06.90	63.11	15.24	59.80	20.07	55.80	19.90	52.81	14.81
3	03.38	58.07	04.57	07.24	63.00	15.45	59.68	20.10	55.69	19.81	52.75	14.62
4	03.48	58.33	04.55	07.57	62.90	15.65	59.56	20.13	55.59	19.73	52.67	14.41
5	03.57	58.62	04.52	07.88	62.80	15.82	59.45	20.18	55.48	19.66	52.58	14.19
6	03.65	58.92	04.47	08.17	62.72	15.98	59.35	20.24	55.36	19.59	52.50	13.95
7	03.73	59.23	04.43	08.43	62.65	16.15	59.24	20.31	55.23	19.51	52.42	13.69
8	03.79	59.54	04.40	08.68	62.58	16.34	59.13	20.40	55.09	19.42	52.34	13.41
9	03.83	59.85	04.38	08.91	62.52	16.54	59.00	20.49	54.96	19.30	52.26	13.12
10	03.87	60.13	04.36	09.14	62.44	16.76	58.86	20.58	54.82	19.16	52.20	12.82
11	03.91	60.40	04.36	09.39	62.35	16.99	58.71	20.65	54.69	19.00	52.16	12.52
12	03.94	60.65	04.36	09.66	62.25	17.21	58.56	20.70	54.57	18.83	52.12	12.21
13	03.98	60.89	04.34	09.95	62.14	17.45	58.41	20.74	54.45	18.65	52.09	11.91
14	04.04	61.12	04.33	10.26	62.01	17.66	58.25	20.75	54.34	18.46	52.06	11.63
15	04.11	61.36	04.30	10.57	61.88	17.85	58.09	20.74	54.25	18.28	52.04	11.35
16	04.17	61.62	04.26	10.89	61.75	18.02	57.95	20.72	54.15	18.09	52.02	11.09
17	04.25	61.91	04.20	11.20	61.62	18.17	57.82	20.70	54.07	17.92	51.98	10.84
18	^{01:21} 04.35	^{62:20} 62.22	04.14	11.49	61.50	18.30	57.70	20.67	53.99	17.76	51.95	10.59
19	04.41	62.85	04.06	11.76	61.38	18.43	57.57	20.64	53.90	17.62	51.91	10.34
20	04.43	63.18	03.99	12.01	61.26	18.54	57.46	20.63	53.81	17.48	51.86	10.06
21	04.44	63.50	03.92	12.25	61.16	18.66	57.35	20.61	53.70	17.33	51.81	09.76
22	04.45	63.81	03.86	12.48	61.06	18.80	57.22	20.61	53.59	17.16	51.77	09.44
23	04.45	64.09	03.80	12.70	60.96	18.94	57.10	20.62	53.48	16.97	51.74	09.10
24	04.45	64.36	03.74	12.93	60.86	19.09	56.98	20.62	53.37	16.76	51.73	08.75
25	04.45	64.62	03.68	13.16	60.75	19.25	56.84	20.62	53.26	16.52	51.72	08.39
26	04.45	64.88	03.64	13.40	60.63	19.41	56.69	20.59	53.16	16.27	51.74	08.04
27	04.47	65.14	03.59	13.65	60.51	19.57	56.53	20.55	53.08	16.00	51.77	07.72
28	04.49	65.40	03.54	13.91	60.38	19.71	56.38	20.48	53.02	15.74	51.79	07.41
29	04.50	65.67	03.47	14.19	60.23	19.84	56.24	20.37	52.96	15.48	51.81	07.13
30	04.52	65.96	03.40	14.47	60.08	19.94	56.11	20.25	52.91	15.24	51.82	06.84
31	04.55	66.26	03.31	14.74	59.94	20.02	56.00	20.12	52.86	15.01	51.81	06.56
32	04.57	66.57	03.21	15.00			55.89	20.00			51.81	06.29

Catalogue Number 1212.

Spectrum Ko.

(12961)

T 2

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

σ Octantis. Mag. 5.48												
Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m 19 42	[°] ['] 89 11	^h ^m 19 42	[°] ['] 89 11	^h ^m 19 43	[°] ['] 89 11	^h ^m 19 44	[°] ['] 89 11	^h ^m 19 45	[°] ['] 89 11	^h ^m 19 45	[°] ['] 89 11
1	35.76	69.21	48.13	58.50	22.19	50.02	13.80	44.48	07.72	43.38	57.24	46.71
2	35.56	68.85	49.13	58.15	23.86	49.78	15.56	44.41	09.30	43.43	58.54	46.86
3	35.48	68.47	50.20	57.82	25.52	49.56	17.25	44.35	10.87	43.47	59.88	47.00
4	35.52	68.08	51.31	57.49	27.13	49.36	18.91	44.27	12.44	43.50	61.28	47.16
5	35.67	67.70	52.40	57.19	28.67	49.17	20.52	44.18	14.04	43.52	62.73	47.33
6	35.94	67.33	53.44	56.91	30.15	48.97	22.13	44.08	15.70	43.55	64.21	47.52
7	36.28	66.99	54.42	56.64	31.56	48.78	23.76	43.96	17.41	43.58	65.71	47.73
8	36.64	66.65	55.34	56.35	32.95	48.58	25.45	43.85	19.19	43.63	67.17	47.95
9	36.96	66.33	56.22	56.06	34.32	48.36	27.20	43.74	21.02	43.68	68.55	48.19
10	37.22	66.02	57.09	55.77	35.71	48.13	29.03	43.64	22.89	43.75	69.82	48.44
11	37.42	65.72	57.97	55.47	37.15	47.90	30.93	43.56	24.77	43.84	70.99	48.70
12	37.58	65.39	58.88	55.15	38.65	47.67	32.89	43.49	26.60	43.96	72.05	48.94
13	37.73	65.07	59.85	54.81	40.24	47.44	34.89	43.43	28.35	44.09	73.05	49.17
14	37.87	64.73	60.93	54.48	41.91	47.21	36.88	43.40	30.00	44.22	74.04	49.38
15	38.03	64.38	62.06	54.16	43.67	47.00	38.83	43.38	31.56	44.35	75.07	49.57
16	38.25	64.01	63.32	53.83	45.49	46.81	40.70	43.38	33.04	44.47	76.16	49.75
17	38.55	63.64	64.66	53.53	47.34	46.64	42.48	43.38	34.47	44.58	77.35	49.94
18	38.94	63.26	66.07	53.24	49.19	46.49	44.17	43.38	35.92	44.67	78.63	50.14
19	39.44	62.89	67.51	52.97	50.98	46.35	45.80	43.36	37.45	44.75	79.94	50.37
20	40.04	62.52	68.92	52.72	52.70	46.22	47.44	43.33	39.07	44.82	81.22	50.62
21	40.73	62.16	70.27	52.48	54.32	46.10	49.11	43.27	40.77	44.90	82.44	50.89
22	41.48	61.83	71.55	52.25	55.88	45.95	50.87	43.21	42.54	45.00	83.54	51.18
23	42.25	61.51	72.75	52.01	57.41	45.79	52.73	43.16	44.32	45.13	84.53	51.47
24	42.99	61.20	73.91	51.75	58.96	45.62	54.69	43.12	46.07	45.28	85.42	51.77
25	43.66	60.90	75.07	51.47	60.58	45.43	56.70	43.10	47.75	45.46	86.21	52.06
26	44.25	60.61	76.27	51.18	62.31	45.24	58.72	43.11	49.33	45.65	86.93	52.33
27	44.79	60.29	77.58	50.88	64.15	45.06	60.69	43.14	50.80	45.84	87.63	52.60
28	45.31	59.97	79.02	50.58	66.08	44.90	62.57	43.20	52.17	46.03	88.32	52.84
29	45.86	59.62	80.56	50.29	68.05	44.76	64.37	43.26	53.47	46.22	89.03	53.08
30	46.49	59.25	82.19	50.02	70.02	44.65	66.09	43.33	54.73	46.39	89.77	53.33
31	47.24	58.87			71.95	44.56	67.72	43.38	55.98	46.55	90.57	53.57
32	48.13	58.50			73.80	44.48			57.24	46.71		

Mean R.A. 19^h 44^m 35^s.122 Mean Dec. — 89° 11' 58".99 Sec δ 71.597 Tan δ — 71.590

APPARENT PLACES OF STARS,

AT UPPER TRANSIT AT GREENWICH.

σ Octantis. Mag. 5.48												
Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ₁₉ ^m ₄₆ ^s ₈₉ [°] ₁₁		^h ₁₉ ^m ₄₆ ^s ₈₉ [°] ₁₂		^h ₁₉ ^m ₄₅ ^s ₈₉ [°] ₁₂		^h ₁₉ ^m ₄₅ ^s ₈₉ [°] ₁₂		^h ₁₉ ^m ₄₄ ^s ₈₉ [°] ₁₂		^h ₁₉ ^m ₄₄ ^s ₈₉ [°] ₁₂	
1	30.57	53.57	42.57	03.15	86.78	12.05	50.69	17.27	65.66	17.15	30.52	11.73
2	31.42	53.82	42.57	03.49	85.68	12.30	49.18	17.32	64.48	17.04	29.79	11.50
3	32.30	54.08	42.45	03.85	84.54	12.53	47.77	17.37	63.33	16.95	28.98	11.27
4	33.18	54.36	42.20	04.19	83.42	12.72	46.45	17.41	62.13	16.86	28.10	11.04
5	34.04	54.67	41.85	04.52	82.37	12.91	45.21	17.45	60.85	16.77	27.16	10.81
6	34.85	54.99	41.43	04.82	81.41	13.08	44.00	17.51	59.50	16.68	26.19	10.56
7	35.55	55.32	40.99	05.11	80.53	13.26	42.76	17.58	58.07	16.59	25.23	10.28
8	36.12	55.65	40.59	05.37	79.70	13.47	41.46	17.67	56.57	16.49	24.32	09.98
9	36.58	55.97	40.26	05.62	78.86	13.68	40.07	17.76	55.04	16.36	23.47	09.66
10	36.95	56.28	40.02	05.87	77.98	13.91	38.57	17.85	53.53	16.20	22.71	09.33
11	37.28	56.56	39.85	06.14	77.01	14.14	36.98	17.93	52.06	16.03	22.05	09.01
12	37.62	56.83	39.70	06.43	75.92	14.38	35.34	17.98	50.66	15.84	21.49	08.69
13	38.01	57.09	39.52	06.74	74.71	14.60	33.68	18.01	49.34	15.65	21.01	08.37
14	38.48	57.34	39.26	07.06	73.41	14.82	32.01	18.01	48.11	15.45	20.59	08.07
15	39.03	57.60	38.89	07.38	72.05	15.02	30.38	18.00	46.96	15.26	20.21	07.77
16	39.64	57.88	38.40	07.70	70.66	15.20	28.81	17.98	45.87	15.06	19.84	07.49
17	40.25	58.18	37.80	08.02	69.28	15.36	27.30	17.95	44.82	14.87	19.43	07.22
18	40.82	58.50	37.11	08.33	67.92	15.51	25.86	17.92	43.80	14.70	18.96	06.95
19	{41.23}	{58.83}	36.35	08.62	66.61	15.65	24.48	17.89	42.76	14.54	18.43	06.67
20	{41.63}	{59.18}	35.57	08.89	65.35	15.78	23.15	17.86	41.66	14.38	17.85	06.37
21	41.85	59.52	34.79	09.15	64.13	15.91	21.84	17.84	40.49	14.21	17.27	06.05
22	41.96	59.86										
23	42.00	60.19	34.05	09.40	62.97	16.04	20.53	17.84	39.25	14.04	16.74	05.70
24	41.99	60.50	33.33	09.63	61.84	16.18	19.17	17.84	37.99	13.83	16.31	05.35
25	41.96	60.79	32.65	09.87	60.69	16.33	17.72	17.84	36.73	13.60	15.99	04.97
26	41.93	61.07	32.02	10.12	59.50	16.49	16.19	17.83	35.52	13.34	15.83	04.59
27	41.94	61.35	31.42	10.37	58.24	16.66	14.58	17.79	34.41	13.07	15.81	04.22
28	41.98	61.62	30.83	10.63	56.88	16.82	12.93	17.74	33.44	12.79	15.87	03.87
29	42.07	61.90	30.21	10.91	55.41	16.97	11.29	17.66	32.61	12.51	15.96	03.55
30	42.21	62.19	29.52	11.20	53.86	17.09	09.73	17.55	31.88	12.23	16.01	03.24
31	42.36	62.50	28.73	11.49	52.27	17.19	08.26	17.42	31.20	11.97	16.01	02.94
32	42.49	62.82	27.81	11.78	50.69	17.27	06.91	17.28	30.52	11.73	15.94	02.64
33	42.57	63.15	26.78	12.05			05.66	17.15			15.79	02.33

Catalogue Number 1207.

Spectrum Fo.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

48 G Octantis. Mag. 7.08

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39
1	26.08	37.76	26.75	27.12	30.85	17.72	37.94	10.35	45.98	07.14	53.98	08.31
2	26.01	37.43	26.87	26.75	31.08	17.42	38.20	10.22	46.22	07.12	54.20	08.40
3	25.96	37.06	26.99	26.38	31.30	17.14	38.44	10.08	46.46	07.10	54.43	08.49
4	25.93	36.69	27.12	26.03	31.52	16.89	38.68	09.94	46.71	07.07	54.67	08.58
5	25.92	36.32	27.25	25.70	31.73	16.64	38.91	09.79	46.96	07.03	54.91	08.68
6	25.92	35.96	27.37	25.39	31.93	16.40	39.15	09.63	47.21	06.97	55.17	08.81
7	25.93	35.61	27.48	25.09	32.11	16.15	39.38	09.46	47.47	06.92	55.43	08.94
8	25.95	35.28	27.58	24.79	32.29	15.91	39.61	09.29	47.76	06.89	55.69	09.09
9	25.97	34.96	27.68	24.50	32.47	15.65	39.86	09.11	48.05	06.87	55.93	09.27
10	25.97	34.67	27.77	24.18	32.65	15.39	40.13	08.94	48.35	06.86	56.16	09.46
11	25.97	34.37	27.86	23.85	32.84	15.11	40.41	08.77	48.65	06.88	56.37	09.65
12	25.96	34.07	27.96	23.51	33.04	14.82	40.70	08.62	48.93	06.92	56.56	09.85
13	25.94	33.76	28.07	23.16	33.24	14.53	41.00	08.49	49.22	06.98	56.74	10.03
14	25.92	33.43	28.19	22.80	33.47	14.25	41.30	08.38	49.49	07.04	56.92	10.19
15	25.90	33.09	28.33	22.44	33.72	13.97	41.59	08.29	49.74	07.11	57.10	10.34
16	25.89	32.73	28.48	22.09	33.96	13.72	41.87	08.22	49.98	07.16	57.30	10.47
17	25.89	32.37	28.64	21.74	34.22	13.48	42.14	08.15	50.21	07.20	57.51	10.60
18	25.91	31.99	28.82	21.41	34.48	13.26	42.39	08.07	50.44	07.22	57.74	10.74
19	25.95	31.61	29.01	21.10	34.73	13.05	42.63	07.98	50.69	07.23	57.97	10.90
20	26.01	31.24	29.20	20.81	34.97	12.86	42.87	07.88	50.95	07.24	58.21	11.08
21	26.07	30.87	29.37	20.54	35.20	12.68	43.13	07.77	51.23	07.25	58.44	11.29
22	26.14	30.53	29.53	20.26	35.42	12.48	43.39	07.64	51.51	07.28	58.65	11.53
23	26.22	30.20	29.67	19.98	35.63	12.27	43.66	07.51	51.81	07.34	58.84	11.77
24	26.29	29.90	29.81	19.69	35.84	12.04	43.96	07.40	52.09	07.41	59.01	12.02
25	26.36	29.59	29.95	19.39	36.06	11.80	44.26	07.31	52.38	07.50	59.17	12.26
26	26.41	29.29	30.10	19.07	36.30	11.54	44.58	07.23	52.64	07.62	59.32	12.49
27	26.45	28.97	30.26	18.73	36.55	11.29	44.88	07.18	52.89	07.75	59.46	12.71
28	26.49	28.63	30.44	18.38	36.83	11.05	45.17	07.16	53.12	07.88	59.60	12.92
29	26.53	28.28	30.64	18.04	37.11	10.85	45.46	07.15	53.35	08.00	59.75	13.13
30	26.58	27.91	30.85	17.72	37.39	10.66	45.72	07.14	53.56	08.11	59.89	13.33
31	26.65	27.51			37.68	10.49	45.98	07.14	53.77	08.21	60.05	13.53
32	26.75	27.12			37.94	10.35			53.98	08.31		

Mean R.A. 20^h 25^m 43^s.174 Mean Dec. — 84° 39' 23".13 Sec δ 10.738 Tan δ — 10.691

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

48 G Octantis. Mag. 7.08

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ^m ^s 20 26 84 39	^h ^m ^s 20 26 84 39	^h ^m ^s 20 26 84 39	^h ^m ^s 20 26 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39	^h ^m ^s 20 25 84 39
1	00.05	13.53	03.29	22.21	62.25	31.31	57.74	37.69	51.32	39.35	45.72	35.62
2	00.22	13.73	03.34	22.54	62.12	31.59	57.53	37.80	51.14	39.29	45.58	35.44
3	00.39	13.95	03.36	22.87	61.98	31.85	57.34	37.90	50.97	39.25	45.44	35.26
4	00.57	14.18	03.38	23.21	61.85	32.09	57.16	37.99	50.79	39.21	45.30	35.08
5	00.74	14.43	03.36	23.54	61.73	32.30	56.99	38.08	50.60	39.18	45.13	34.90
6	00.91	14.71	03.35	23.85	61.61	32.50	56.83	38.19	50.40	39.16	44.96	34.69
7	01.07	15.00	03.33	24.14	61.51	32.70	56.67	38.31	50.18	39.13	44.80	34.45
8	01.21	15.29	03.30	24.41	61.42	32.92	56.50	38.44	49.95	39.09	44.63	34.20
9	01.32	15.59	03.29	24.66	61.34	33.15	56.31	38.58	49.71	39.03	44.48	33.94
10	01.41	15.87	03.30	24.90	61.25	33.40	56.11	38.73	49.47	38.94	44.33	33.67
11	01.50	16.14	03.32	25.16	61.14	33.68	55.88	38.87	49.24	38.84	44.20	33.39
12	01.59	16.38	03.35	25.44	61.01	33.96	55.65	38.98	49.02	38.71	44.09	33.10
13	01.68	16.60	03.36	25.73	60.86	34.23	55.41	39.07	48.81	38.57	43.99	32.82
14	01.80	16.82	03.37	26.05	60.70	34.48	55.17	39.14	48.61	38.43	43.90	32.54
15	01.93	17.04	03.37	26.38	60.53	34.72	54.93	39.19	48.42	38.28	43.82	32.28
16	02.06	17.29	03.34	26.72	60.35	34.95	54.70	39.23	48.25	38.15	43.73	32.03
17	02.20	17.55	03.29	27.05	60.17	35.15	54.49	39.26	48.09	38.02	43.65	31.79
18	02.34	17.84	03.23	27.36	59.99	35.33	54.28	39.28	47.93	37.90	43.55	31.55
19	02.46	18.14	03.16	27.66	59.82	35.50	54.08	39.31	47.76	37.79	43.45	31.30
20	02.56	18.46	03.08	27.95	59.66	35.67	53.89	39.34	47.59	37.68	43.33	31.05
21	02.65	18.78	03.00	28.23	59.51	35.84	53.71	39.38	47.40	37.57	43.20	30.77
22	02.71	19.10	02.93	28.49	59.36	36.02	53.53	39.43	47.20	37.44	43.09	30.47
23	02.75	19.41	02.86	28.75	59.21	36.22	53.33	39.48	46.99	37.29	42.99	30.14
24	02.79	19.71	02.79	28.99	59.07	36.41	53.13	39.54	46.79	37.12	42.91	29.80
25	02.83	19.99	02.73	29.24	58.93	36.61	52.90	39.59	46.58	36.93	42.85	29.45
26	02.87	20.26	02.69	29.51	58.77	36.81	52.67	39.62	46.39	36.72	42.81	29.10
27	02.91	20.52	02.65	29.79	58.59	37.02	52.42	39.63	46.22	36.49	42.79	28.77
28	02.96	20.78	02.60	30.09	58.39	37.23	52.18	39.61	46.08	36.25	42.77	28.45
29	^{03.02} ^{03.09}	^{21.03} ^{21.29}	02.54	30.39	58.17	37.41	51.94	39.57	45.96	36.02	42.76	28.15
30	03.15	21.58	02.46	30.70	57.96	37.56	51.71	39.50	45.84	35.81	42.73	27.87
31	03.22	21.88	02.36	31.01	57.74	37.69	51.51	39.42	45.72	35.62	42.69	27.60
32	03.29	22.21	02.25	31.31			51.32	39.35			42.64	27.32

Catalogue Number 1260.

Spectrum Ao.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

 ν Octantis. Mag. 5.74

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₂₀	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₂₀	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₁₉	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₁₉	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₁₉	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₁₉
	^s	["]	^s	["]	^s	["]	^s	["]	^s	["]	^s	["]
1	07.99	31.52	03.31	21.81	03.77	70.89	09.20	59.85	17.94	51.90	28.88	47.92
2	07.72	31.27	03.25	21.41	03.91	70.49	09.46	59.57	18.26	51.73	29.21	47.86
3	07.46	30.99	03.24	21.01	04.06	70.10	09.69	59.29	18.56	51.55	29.55	47.80
4	07.22	30.69	03.23	20.63	04.21	69.73	09.93	59.01	18.85	51.37	29.90	47.74
5	07.00	30.38	03.23	20.27	04.35	69.39	10.15	58.73	19.15	51.18	30.28	47.68
6	06.83	30.07	03.23	19.92	04.48	69.05	10.37	58.45	19.46	50.97	30.66	47.62
7	06.67	29.76	03.22	19.58	04.60	68.72	10.59	58.15	19.79	50.76	31.07	47.59
8	06.52	29.47	03.19	19.25	04.71	68.38	10.82	57.84	20.13	50.55	31.48	47.58
9	06.38	29.19	03.16	18.91	04.80	68.04	11.05	57.52	20.49	50.35	31.88	47.59
10	06.23	28.92	03.12	18.57	04.90	67.68	11.31	57.20	20.87	50.16	32.27	47.62
11	06.07	28.66	03.07	18.22	05.00	67.31	11.58	56.87	21.27	49.99	32.65	47.66
12	05.90	28.41	03.02	17.86	05.11	66.93	11.88	56.55	21.67	49.84	33.00	47.71
13	05.71	28.15	02.98	17.48	05.24	66.55	12.20	56.25	22.07	49.71	33.32	47.75
14	05.51	27.88	02.94	17.08	05.39	66.15	12.54	55.97	22.45	49.61	33.62	47.78
15	05.31	27.59	02.93	16.68	05.56	65.75	12.88	55.71	22.80	49.51	33.93	47.80
16	05.11	27.28	02.95	16.26	05.76	65.36	13.20	55.46	23.14	49.40	34.25	47.79
17	04.92	26.95	02.99	15.85	05.97	64.99	13.50	55.22	23.46	49.29	34.60	47.77
18	04.75	26.62	03.04	15.45	06.19	64.64	13.79	55.00	23.77	49.16	34.96	47.76
19	04.60	26.27	03.12	15.07	06.41	64.29	14.06	54.78	24.08	49.02	35.34	47.76
20	04.48	25.90	03.21	14.70	06.63	63.97	14.33	54.53	24.42	48.87	35.74	47.79
21	04.37	25.54	03.29	14.35	06.83	63.66	14.59	54.27	24.78	48.71	36.14	47.85
22	04.29	25.20	03.36	14.00	07.01	63.35	14.86	53.99	25.18	48.55	36.52	47.93
23	04.22	24.87	03.42	13.66	07.17	63.03	15.16	53.69	25.58	48.41	36.89	48.03
24	04.16	24.54	03.45	13.31	07.33	62.69	15.48	53.40	26.00	48.30	37.24	48.14
25	04.09	24.23	03.46	12.95	07.48	62.33	15.82	53.13	26.40	48.21	37.57	48.26
26	04.00	23.92	03.48	12.57	07.66	61.95	16.19	52.87	26.81	48.15	37.86	48.37
27	03.89	23.62	03.52	12.17	07.87	61.56	16.57	52.65	27.19	48.11	38.16	48.48
28	03.76	23.30	03.58	11.74	08.10	61.18	16.93	52.42	27.55	48.08	38.45	48.58
29	03.63	22.96	03.66	11.31	08.37	60.81	17.28	52.23	27.90	48.03	38.74	48.67
30	03.50	22.60	03.77	10.89	08.64	60.47	17.62	52.06	28.24	48.02	39.02	48.76
31	03.40	22.21			08.92	60.15	17.94	51.90	28.57	47.97	39.34	48.84
32	03.31	21.81			09.20	59.85			28.88	47.92		

Mean R.A. $22^{\text{h}} 18^{\text{m}} 22^{\text{s}}.526$ Mean Dec. $- 86^{\circ} 20' 08''.06$ Sec δ 15.646 Tan δ $- 15.614$

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

ν Octantis. Mag. 5.74

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₁₉	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₁₉	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₂₀	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₂₀	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₂₀	^h ₂₂ ^m ₁₈	[°] ₈₆ ['] ₂₀
	^s	["]	^s	["]	^s	["]	^s	["]	^s	["]	^s	["]
1	39.34	48.84	47.62	54.42	51.06	03.59	48.38	12.32	40.79	18.11	31.50	18.63
2	39.66	48.92	47.85	54.67	51.03	03.93	48.16	12.56	40.52	18.18	31.24	18.56
3	39.98	49.01	48.08	54.94	50.98	04.25	47.96	12.77	40.27	18.25	30.97	18.49
4	40.34	49.11	48.29	55.23	50.92	04.56	47.76	12.97	40.02	18.35	30.67	18.44
5	40.70	49.23	48.48	55.52	50.87	04.83	47.58	13.16	39.77	18.46	30.35	18.38
6	41.05	49.38	48.64	55.82	50.83	05.08	47.42	13.36	39.49	18.59	30.03	18.31
7	41.39	49.55	48.76	56.11	50.80	05.34	47.27	13.59	39.18	18.71	29.69	18.22
8	41.70	49.73	48.87	56.38	50.79	05.59	47.12	13.84	38.85	18.81	29.34	18.11
9	42.00	49.92	48.97	56.64	50.80	05.87	46.95	14.10	38.51	18.91	29.00	17.98
10	42.26	50.10	49.08	56.88	50.81	06.17	46.75	14.35	38.16	18.99	28.66	17.83
11	42.50	50.28	49.21	57.10	50.80	06.48	46.53	14.61	37.80	19.05	28.35	17.67
12	42.74	50.44	49.36	57.33	50.76	06.81	46.29	14.87	37.44	19.09	28.06	17.50
13	42.99	50.59	49.53	57.56	50.71	07.15	46.03	15.12	37.10	19.11	27.78	17.32
14	43.25	50.72	49.71	57.82	50.63	07.49	45.75	15.34	36.77	19.12	27.52	17.15
15	43.52	50.85	49.88	58.10	50.52	07.81	45.46	15.53	36.45	19.12	27.28	16.98
16	43.81	50.98	50.04	58.41	50.40	08.13	45.18	15.72	36.15	19.11	27.04	16.82
17	44.13	51.12	50.17	58.73	50.27	08.42	44.90	15.89	35.87	19.11	26.81	16.67
18	44.45	51.30	50.27	59.06	50.13	08.71	44.64	16.05	35.59	19.12	26.55	16.53
19	44.76	51.51	50.35	59.39	50.00	08.98	44.40	16.20	35.31	19.14	26.28	16.39
20	45.04	51.74	50.41	59.70	49.87	09.24	44.17	16.36	35.03	19.17	25.99	16.24
21	45.30	51.97	50.46	60.01	49.76	09.49	43.95	16.53	34.73	19.20	25.70	16.06
22	45.54	52.22	50.50	60.31	49.65	09.75	43.72	16.70	34.41	19.22	25.39	15.87
23	45.76	52.47	50.53	60.59	49.55	10.01	43.49	16.88	34.06	19.24	25.08	15.65
24	45.97	52.70	50.56	60.87	49.46	10.28	43.25	17.07	33.69	19.22	24.80	15.40
25	46.16	52.93	50.61	61.15	49.37	10.56	42.99	17.27	33.33	19.19	24.54	15.14
26	46.33	53.15	^{60.67} ^{50.74}	^{61.41} ^{61.68}	49.27	10.87	42.70	17.45	32.97	19.12	24.30	14.87
27	46.52	53.37	50.82	61.96	49.14	11.17	42.37	17.63	32.64	19.02	24.10	14.59
28	46.72	53.57	50.89	62.26	48.99	11.48	42.05	17.78	32.32	18.92	23.91	14.33
29	46.93	53.77	50.97	62.59	48.81	11.78	41.71	17.90	32.02	18.81	23.74	14.09
30	47.15	53.98	51.03	62.92	48.60	12.06	41.38	18.00	31.76	18.71	23.56	13.87
31	47.38	54.19	51.06	63.26	48.38	12.32	41.08	18.06	31.50	18.63	23.35	13.67
32	47.62	54.42	51.06	63.59			40.79	18.11			23.13	13.46

Catalogue Number 1390.

Spectrum Ko.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	2 Ceti.		α Andromedæ.		β Cassiopeiæ.	
	4.62	A o	2.15	A o p	2.42	F 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 00 00	^m 17 43	^h 00 04	^m 28 41	^h 00 05	^m 58 44
Jan. 0.7	01.970 ^s	85.93	38.365 ^s	36.86	17.850 ^s	79.96
10.7	01.859 ¹¹¹	86.26 ³³	38.225 ¹⁴⁰	35.97 ⁸⁹	17.529 ³²¹	79.27 ⁶⁹
20.7	01.758 ¹⁰¹	86.37 ¹¹	38.091 ¹³⁴	34.82 ¹¹⁵	17.220 ³⁰⁹	78.07 ¹²⁰
30.6	01.670 ⁸⁸	86.24 ¹³	37.968 ¹²³	33.46 ¹³⁶	16.934 ²⁸⁶	76.39 ¹⁶⁸
Feb. 9.6	01.599 ⁷¹	85.87 ³⁷	37.864 ¹⁰⁴	31.95 ¹⁵¹	16.684 ²⁵⁰	74.32 ²⁰⁷
19.6	01.549 ⁵⁰	85.25 ⁶²	37.784 ⁸⁰	30.35 ¹⁶⁰	16.483 ²⁰¹	71.94 ²³⁸
29.6	01.525 ²⁴	84.39 ⁸⁶	37.735 ⁴⁹	28.73 ¹⁶²	16.341 ¹⁴²	69.34 ²⁶⁰
Mar. 10.5	01.533 ⁸	83.29 ¹¹⁰	37.722 ¹³	27.18 ¹⁵⁵	16.267 ⁷⁴	66.64 ²⁷⁰
20.5	01.575 ⁴²	81.94 ¹³⁵	37.751 ²⁹	25.77 ¹⁴¹	16.269 ²	63.96 ²⁶⁸
30.5	01.655 ⁸⁰	80.36 ¹⁵⁸	37.825 ⁷⁴	24.57 ¹²⁰	16.350 ⁸¹	61.41 ²⁵⁵
Apr. 9.5	01.774 ¹¹⁹	78.58 ¹⁷⁸	37.945 ¹²⁰	23.65 ⁹²	16.511 ¹⁶¹	59.08 ²³³
19.4	01.934 ¹⁶⁰	76.62 ¹⁹⁶	38.112 ¹⁶⁷	23.06 ⁵⁹	16.749 ²³⁸	57.08 ²⁰⁰
29.4	02.134 ²⁰⁰	74.51 ²¹¹	38.324 ²¹²	22.83 ²³	17.059 ³¹⁰	55.48 ¹⁶⁰
May 9.4	02.370 ²³⁶	72.28 ²²³	38.576 ²⁵²	23.00 ¹⁷	17.432 ³⁷³	54.34 ¹¹⁴
19.3	02.639 ²⁶⁹	70.00 ²²⁸	38.862 ²⁸⁶	23.55 ⁵⁵	17.858 ⁴²⁶	53.71 ⁶³
29.3	02.934 ²⁹⁵	67.71 ²²⁹	39.176 ³¹⁴	24.49 ⁹⁴	18.324 ⁴⁶⁶	53.61 ¹⁰
June 8.3	03.250 ³¹⁶	65.47 ²²⁴	39.510 ³³⁴	25.80 ¹³¹	18.816 ⁴⁹²	54.04 ⁴³
18.3	03.578 ³²⁸	63.33 ²¹⁴	39.854 ³⁴⁴	27.44 ¹⁶⁴	19.323 ⁵⁰⁷	54.98 ⁹⁴
28.2	03.909 ³³¹	61.34 ¹⁹⁹	40.200 ³⁴⁶	29.36 ¹⁹²	19.829 ⁵⁰⁶	56.42 ¹⁴⁴
July 8.2	04.235 ³²⁶	59.57 ¹⁷⁷	40.538 ³³⁸	31.52 ²¹⁶	20.321 ⁴⁹²	58.32 ¹⁹⁰
18.2	04.550 ³¹⁵	58.04 ¹⁵³	40.861 ³²³	33.86 ²³⁴	20.787 ⁴⁶⁶	60.62 ²³⁰
28.2	04.842 ²⁹²	56.79 ¹²⁵	41.160 ²⁹⁹	36.33 ²⁴⁷	21.216 ⁴²⁹	63.28 ²⁶⁶
Aug. 7.1	05.107 ²⁶⁵	55.87 ⁹²	41.429 ²⁶⁹	38.86 ²⁵³	21.599 ³⁸³	66.23 ²⁹⁵
17.1	05.339 ²³²	55.26 ⁶¹	41.664 ²³⁵	41.40 ²⁵⁴	21.929 ³³⁰	69.40 ³¹⁷
27.1	05.534 ¹⁹⁵	54.98 ²⁸	41.860 ¹⁹⁶	43.90 ²⁵⁰	22.200 ²⁷¹	72.73 ³³³
Sept. 6.0	05.689 ¹⁵⁵	55.02 ⁴	42.015 ¹⁵⁵	46.32 ²⁴²	22.409 ²⁰⁹	76.16 ³⁴³
16.0	05.802 ¹¹³	55.37 ³⁵	42.130 ¹¹⁵	48.61 ²²⁹	22.554 ¹⁴⁵	79.60 ³⁴⁴
26.0	05.874 ⁷²	55.97 ⁶⁰	42.204 ⁷⁴	50.73 ²¹²	22.635 ⁸¹	83.00 ³⁴⁰
Oct. 6.0	05.908 ³⁴	56.79 ⁸²	42.239 ³⁵	52.64 ¹⁹¹	22.654 ¹⁹	86.29 ³²⁹
15.9	05.907 ¹	57.77 ⁹⁸	42.240 ³¹	54.33 ¹⁶⁹	22.613 ⁴¹	89.39 ³¹⁰
25.9	05.875 ³²	58.87 ¹¹⁰	42.209 ⁵⁹	55.76 ¹⁴³	22.517 ⁹⁶	92.25 ²⁸⁶
Nov. 4.9	05.817 ⁵⁸	60.01 ¹¹⁴	42.150 ⁸²	56.92 ¹¹⁶	22.369 ¹⁴⁸	94.79 ²⁵⁴
14.9	05.738 ⁷⁹	61.14 ¹¹³	42.068 ¹⁰²	57.78 ⁸⁶	22.175 ¹⁹⁴	96.96 ²¹⁷
24.8	05.643 ⁹⁵	62.22 ¹⁰⁸	41.966 ¹¹⁸	58.34 ⁵⁶	21.941 ²³⁴	98.70 ¹⁷⁴
Dec. 4.8	05.538 ¹⁰⁵	63.19 ⁹⁷	41.848 ¹²⁸	58.58 ²⁴	21.673 ²⁶⁸	99.97 ¹²⁷
14.8	05.426 ¹¹²	64.01 ⁸²	41.720 ¹³⁵	58.50 ⁸	21.380 ²⁹³	100.72 ⁷⁵
24.7	05.313 ¹¹³	64.66 ⁶⁵	41.585 ¹³⁸	58.11 ³⁹	21.069 ³¹¹	100.94 ²²
34.7	05.202 ¹¹¹	65.11 ⁴⁵	41.447 ¹³⁸	57.41 ⁷⁰	20.751 ³¹⁸	100.60 ³⁴
Mean Place	03.151	72.00	39.626	34.78	19.361	69.81
Sec δ, Tan δ	1.050	-0.320	1.140	+0.547	1.928	+1.648
L α, L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω α, ω δ	+0.02	0.0	-0.04	0.0	-0.11	0.0
Authority and Catalogue No.	A. N.	1504	A. E.	3	A. E.	4

APPARENT PLACES OF STARS, 1928. 275 AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Pegasi.		ι Ceti.		ζ Tucanae.	
	2.87	B 2	3.75	K 0	4.34	F 8
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
Mean Solar Date.	^h 00 09	^m 14 46'	^h 00 15	^m 9 13	^h 00 16	^m 65 17'
Jan. 0.7	30.303	57.79	44.464	33.22	18.98	77.39
10.7	30.188 ¹¹⁵	56.98 ⁸¹	44.356 ¹⁰⁸	33.75 ⁵³	18.60 ³⁸	76.61 ⁷⁸
20.7	30.077 ¹¹¹	56.06 ⁹²	44.253 ¹⁰³	34.14 ³⁹	18.24 ³⁶	75.27 ¹³⁴
30.7	29.977 ¹⁰⁰	55.07 ⁹⁹	44.159 ⁹⁴	34.36 ²²	17.92 ³²	73.40 ¹⁸⁷
Feb. 9.6	29.891 ⁸⁶	54.04 ¹⁰³	44.079 ⁸⁰	34.40 ⁴	17.64 ²⁸	71.06 ²³⁴
19.6	29.825 ⁶⁶	53.04 ¹⁰⁰	44.018 ⁶¹	34.24 ¹⁶	17.42 ²²	68.31 ²⁷⁵
29.6	29.785 ⁴⁰	52.11 ⁹³	43.981 ³⁷	33.87 ³⁷	17.27 ¹⁵	65.21 ³¹⁰
Mar. 10.5	29.777 ⁸	51.30 ⁸¹	43.973 ⁸	33.27 ⁶⁰	17.19 ⁸	61.85 ³³⁶
20.5	29.806 ²⁹	50.68 ⁶²	43.998 ²⁵	32.43 ⁸⁴	17.18 ¹	58.29 ³⁵⁶
30.5	29.874 ⁶⁸	50.29 ³⁹	44.060 ⁶²	31.36 ¹⁰⁷	17.25 ⁷	54.62 ³⁶⁷
Apr. 9.5	29.983 ¹⁰⁹	50.16 ¹³	44.162 ¹⁰²	30.05 ¹³¹	17.41 ¹⁶	50.90 ³⁷²
19.4	30.135 ¹⁵²	50.34 ¹⁸	44.304 ¹⁴²	28.52 ¹⁵³	17.64 ²³	47.21 ³⁶⁹
29.4	30.329 ¹⁹⁴	50.83 ⁴⁹	44.486 ¹⁸²	26.79 ¹⁷³	17.96 ³²	43.64 ³⁵⁷
May 9.4	30.560 ²³¹	51.64 ⁸¹	44.705 ²¹⁹	24.88 ¹⁹¹	18.35 ³⁹	40.27 ³³⁷
19.4	30.823 ²⁶³	52.76 ¹¹²	44.958 ²⁵³	22.85 ²⁰³	18.81 ⁴⁶	37.15 ³¹²
29.3	31.114 ²⁹¹	54.16 ¹⁴⁰	45.239 ²⁸¹	20.72 ²¹³	19.33 ⁵²	34.37 ²⁷⁸
June 8.3	31.425 ³¹¹	55.82 ¹⁶⁶	45.541 ³⁰²	18.55 ²¹⁷	19.90 ⁵⁷	31.98 ²³⁹
18.3	31.747 ³²²	57.69 ¹⁸⁷	45.857 ³¹⁶	16.40 ²¹⁵	20.50 ⁶⁰	30.03 ¹⁹⁵
28.2	32.072 ³²⁵	59.71 ²⁰²	46.180 ³²³	14.31 ²⁰⁹	21.12 ⁶²	28.58 ¹⁴⁵
July 8.2	32.392 ³²⁰	61.85 ²¹⁴	46.499 ³¹⁹	12.34 ¹⁹⁷	21.74 ⁶²	27.67 ⁹¹
18.2	32.699 ³⁰⁷	64.04 ²¹⁹	46.808 ³⁰⁹	10.55 ¹⁷⁹	22.35 ⁶¹	27.30 ³⁷
28.2	32.985 ²⁸⁶	66.23 ²¹⁹	47.099 ²⁹¹	08.98 ¹⁵⁷	22.93 ⁵⁸	27.48 ¹⁸
Aug. 7.1	33.245 ²⁶⁰	68.38 ²¹⁵	47.365 ²⁶⁶	07.65 ¹³³	23.47 ⁵⁴	28.21 ⁷³
17.1	33.473 ²²⁸	70.43 ²⁰⁵	47.601 ²³⁶	06.60 ¹⁰⁵	23.95 ⁴⁸	29.46 ¹²⁵
27.1	33.666 ¹⁹³	72.34 ¹⁹¹	47.802 ²⁰¹	05.85 ⁷⁵	24.36 ⁴¹	31.17 ¹⁷¹
Sept. 6.1	33.821 ¹⁵⁵	74.09 ¹⁷⁵	47.966 ¹⁶⁴	05.39 ⁴⁶	24.68 ³²	33.30 ²¹³
16.0	33.938 ¹¹⁷	75.65 ¹⁵⁶	48.092 ¹²⁶	05.22 ¹⁷	24.91 ²³	35.75 ²⁴⁵
26.0	34.016 ⁷⁸	76.99 ¹³⁴	48.179 ⁸⁷	05.32 ¹⁰	25.05 ¹⁴	38.43 ²⁶⁸
Oct. 6.0	34.059 ⁴³	78.11 ¹¹²	48.229 ⁵⁰	05.65 ³³	25.09 ⁴	41.23 ²⁸⁰
15.9	34.070 ¹¹	79.00 ⁸⁹	48.245 ¹⁶	06.18 ⁵³	25.04 ⁵	44.05 ²⁸²
25.9	34.051 ¹⁹	79.67 ⁶⁷	48.231 ¹⁴	06.86 ⁶⁸	24.90 ¹⁴	46.77 ²⁷²
Nov. 4.9	34.008 ⁴³	80.12 ⁴⁵	48.192 ³⁹	07.66 ⁸⁰	24.68 ²²	49.27 ²⁵⁰
14.9	33.943 ⁶⁵	80.35 ²³	48.131 ⁶¹	08.52 ⁸⁶	24.40 ²⁸	51.44 ²¹⁷
24.8	33.861 ⁸²	80.36 ¹	48.053 ⁷⁸	09.39 ⁸⁷	24.07 ³³	53.19 ¹⁷⁵
Dec. 4.8	33.766 ⁹⁵	80.18 ¹⁸	47.961 ⁹²	10.25 ⁸⁶	23.70 ³⁷	54.46 ¹²⁷
14.8	33.661 ¹⁰⁵	79.80 ³⁸	47.861 ¹⁰⁰	11.05 ⁸⁰	23.31 ³⁹	55.18 ⁷²
24.8	33.550 ¹¹¹	79.25 ⁵⁵	47.756 ¹⁰⁵	11.76 ⁷¹	22.91 ⁴⁰	55.33 ¹⁵
34.7	33.437 ¹¹³	78.55 ⁷⁰	47.650 ¹⁰⁶	12.36 ⁶⁰	22.51 ⁴⁰	54.89 ⁴⁴
Mean Place	31.488	60.33	45.557	22.25	19.947	51.92
Sec δ , Tan δ	1.034	+0.264	1.013	-0.162	2.393	-2.174
L α , L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω α , ω δ	-0.02	0.0	+0.01	+0.1	+0.15	+0.1
Authority and Catalogue No.	A. E.	10.	A. E.	16	A. E.	17

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Piscium.		44 Piscium.		β Hydri.	
	5.58	K o	5.99	G 5	2.90	G o
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 00 ^m 16	[°] 7 ['] 47	^h 00 ^m 21	[°] 1 ['] 32	^h 00 ^m 21	[°] 77 ['] 39
Jan. 0.7	52.277 ^s	21.05 ["] 73	41.535 ^s 108	21.31 ["] 67	59.06 ^s 87	61.66 ["] 101
10.7	52.167 ^s 110	20.32 ["] 77	41.427 ^s 105	20.64 ["] 64	58.19 ^s 81	60.65 ["] 161
20.7	52.060 ^s 107	19.55 ["] 77	41.322 ^s 98	20.00 ["] 58	57.38 ^s 73	59.04 ["] 215
30.7	51.962 ^s 98	18.78 ["] 74	41.224 ^s 85	19.42 ["] 49	56.65 ^s 63	56.89 ["] 263
Feb. 9.6	51.876 ^s 86	18.04 ["] 67	41.139 ^s 68	18.93 ["] 37	56.02 ^s 52	54.26 ["] 304
19.6	51.810 ^s 42	17.37 ["] 56	41.071 ^s 43	18.56 ["] 21	55.50 ^s 39	51.22 ["] 337
29.6	51.768 ^s 12	16.81 ["] 39	41.028 ^s 16	18.35 ["] 3	55.11 ^s 24	47.85 ["] 363
Mar. 10.5	51.756 ^s 22	16.42 ["] 20	41.012 ^s 18	18.32 ["] 18	54.87 ^s 9	44.22 ["] 378
20.5	51.778 ^s 61	16.22 ["] 3	41.030 ^s 56	18.50 ["] 41	54.78 ^s 6	40.44 ["] 387
30.5	51.839 ^s 101	16.25 ["] 29	41.086 ^s 96	18.91 ["] 68	54.84 ^s 21	36.57 ["] 387
Apr. 9.5	51.940 ^s 143	16.54 ["] 57	41.182 ^s 137	19.59 ["] 93	55.05 ^s 37	32.70 ["] 379
19.4	52.083 ^s 183	17.11 ["] 86	41.319 ^s 177	20.52 ["] 118	55.42 ^s 52	28.91 ["] 362
29.4	52.266 ^s 222	17.97 ["] 113	41.496 ^s 216	21.70 ["] 142	55.94 ^s 66	25.29 ["] 339
May 9.4	52.488 ^s 254	19.10 ["] 139	41.712 ^s 248	23.12 ["] 164	56.60 ^s 79	21.90 ["] 307
19.4	52.742 ^s 283	20.49 ["] 162	41.960 ^s 278	24.76 ["] 181	57.39 ^s 90	18.83 ["] 269
29.3	53.025 ^s 301	22.11 ["] 180	42.238 ^s 298	26.57 ["] 195	58.29 ^s 99	16.14 ["] 226
June 8.3	53.326 ^s 316	23.91 ["] 196	42.536 ^s 314	28.52 ["] 204	59.28 ^s 106	13.88 ["] 177
18.3	53.642 ^s 321	25.87 ["] 205	42.850 ^s 318	30.56 ["] 208	60.34 ^s 111	12.11 ["] 123
28.2	53.963 ^s 317	27.92 ["] 209	43.168 ^s 316	32.64 ["] 206	61.45 ^s 112	10.88 ["] 67
July 8.2	54.280 ^s 305	30.01 ["] 209	43.484 ^s 306	34.70 ["] 198	62.57 ^s 110	10.21 ["] 10
18.2	54.585 ^s 287	32.10 ["] 202	43.790 ^s 289	36.68 ["] 188	63.67 ^s 106	10.11 ["] 47
28.2	54.872 ^s 262	34.12 ["] 192	44.079 ^s 264	38.56 ["] 171	64.73 ^s 98	10.58 ["] 104
Aug. 7.1	55.134 ^s 231	36.04 ["] 177	44.343 ^s 236	40.27 ["] 151	65.71 ^s 88	11.62 ["] 156
17.1	55.365 ^s 198	37.81 ["] 159	44.579 ^s 201	41.78 ["] 130	66.59 ^s 75	13.18 ["] 203
27.1	55.563 ^s 161	39.40 ["] 138	44.780 ^s 166	43.08 ["] 105	67.34 ^s 59	15.21 ["] 242
Sept. 6.1	55.724 ^s 124	40.78 ["] 117	44.946 ^s 129	44.13 ["] 81	67.93 ^s 42	17.63 ["] 273
16.0	55.848 ^s 88	41.95 ["] 93	45.075 ^s 92	44.94 ["] 55	68.35 ^s 24	20.36 ["] 294
26.0	55.936 ^s 51	42.88 ["] 70	45.167 ^s 57	45.49 ["] 33	68.59 ^s 5	23.30 ["] 303
Oct. 6.0	55.987 ^s 20	43.58 ["] 48	45.224 ^s 24	45.82 ["] 11	68.64 ^s 14	26.33 ["] 301
15.9	56.007 ^s 10	44.06 ["] 28	45.248 ^s 6	45.93 ["] 9	68.50 ^s 31	29.34 ["] 286
25.9	55.997 ^s 35	44.34 ["] 8	45.242 ^s 30	45.84 ["] 26	68.19 ^s 48	32.20 ["] 261
Nov. 4.9	55.962 ^s 56	44.42 ["] 9	45.212 ^s 53	45.58 ["] 38	67.71 ^s 62	34.81 ["] 221
14.9	55.906 ^s 74	44.33 ["] 25	45.159 ^s 70	45.20 ["] 50	67.09 ^s 73	37.02 ["] 175
24.8	55.832 ^s 88	44.08 ["] 39	45.089 ^s 84	44.70 ["] 57	66.36 ^s 82	38.77 ["] 120
Dec. 4.8	55.744 ^s 97	43.69 ["] 50	45.005 ^s 95	44.13 ["] 63	65.54 ^s 88	39.97 ["] 61
14.8	55.647 ^s 104	43.19 ["] 61	44.910 ^s 102	43.50 ["] 66	64.66 ^s 89	40.58 ["] 2
24.8	55.543 ^s 107	42.58 ["] 68	44.808 ^s 105	42.84 ["] 66	63.77 ^s 89	40.56 ["] 64
34.7	55.436 ^s	41.90 ["]	44.703 ^s	42.18 ["]	62.88 ^s	39.92 ["]
Mean Place	53.400	25.98	42.614	28.42	59.735	35.08
Sec δ , Tan δ	1.009	+0.137	1.000	+0.027	4.679	-4.571
L α , L δ	0.00	+0.4	0.00	+0.4	-0.01	+0.4
ω α , ω δ	-0.01	+0.1	0.00	+0.1	+0.31	+0.1
Authority and Catalogue No.	18		21		A. E.	22

APPARENT PLACES OF STARS, 1928. 277

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Phoenicis.		ι Ceti.		ϵ Andromedæ.	
	2.44	K 0	6.05	K 5	4.52	G 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 00 22	[°] ['] 42 41	^h ^m 00 26	[°] ['] 4 21	^h ^m 00 34	[°] ['] 28 55
Jan. 0.7	42.811 ^s 180	69.47 ["] 9	20.776 ^s 108	26.83 ["] 61	43.593 ^s 144	18.58 ["] 67
10.7	42.631 ^s 171	69.38 ["] 54	20.668 ^s 106	27.44 ["] 51	43.449 ^s 144	17.91 ["] 93
20.7	42.460 ^s 155	68.84 ["] 97	20.562 ^s 99	27.95 ["] 39	43.305 ^s 139	16.98 ["] 116
30.7	42.305 ^s 134	67.87 ["] 139	20.463 ^s 87	28.34 ["] 24	43.166 ^s 126	15.82 ["] 133
Feb. 9.6	42.171 ^s 106	66.48 ["] 176	20.376 ^s 70	28.58 ["] 8	43.040 ^s 107	14.49 ["] 144
19.6	42.065 ^s 73	64.72 ["] 211	20.306 ^s 47	28.66 ["] 10	42.933 ^s 79	13.05 ["] 150
29.6	41.992 ^s 36	62.61 ["] 241	20.259 ^s 19	28.56 ["] 32	42.854 ^s 45	11.55 ["] 148
Mar. 10.6	41.956 ^s 7	60.20 ["] 267	20.240 ^s 15	28.24 ["] 54	42.809 ^s 5	10.07 ["] 138
20.5	41.963 ^s 54	57.53 ["] 286	20.255 ^s 51	27.70 ["] 77	42.804 ^s 40	08.69 ["] 120
30.5	42.017 ^s 102	54.67 ["] 300	20.306 ^s 91	26.93 ["] 103	42.844 ^s 88	07.49 ["] 97
Apr. 9.5	42.119 ^s 154	51.67 ["] 308	20.397 ^s 131	25.90 ["] 126	42.932 ^s 136	06.52 ["] 68
19.4	42.273 ^s 204	48.59 ["] 311	20.528 ^s 172	24.64 ["] 149	43.068 ^s 184	05.84 ["] 36
29.4	42.477 ^s 251	45.48 ["] 306	20.700 ^s 211	23.15 ["] 169	43.252 ^s 228	05.48 ["] 1
May 9.4	42.728 ^s 295	42.42 ["] 294	20.911 ^s 245	21.46 ["] 187	43.480 ^s 267	05.49 ["] 38
19.4	43.023 ^s 331	39.48 ["] 277	21.156 ^s 274	19.59 ["] 200	43.747 ^s 299	05.87 ["] 75
29.3	43.354 ^s 362	36.71 ["] 253	21.430 ^s 297	17.59 ["] 208	44.046 ^s 324	06.62 ["] 111
June 8.3	43.716 ^s 383	34.18 ["] 222	21.727 ^s 312	15.51 ["] 212	44.370 ^s 341	07.73 ["] 143
18.3	44.099 ^s 395	31.96 ["] 186	22.039 ^s 319	13.39 ["] 209	44.711 ^s 347	09.16 ["] 172
28.3	44.494 ^s 396	30.10 ["] 145	22.358 ^s 318	11.30 ["] 203	45.058 ^s 345	10.88 ["] 197
July 8.2	44.890 ^s 387	28.65 ["] 102	22.676 ^s 308	09.27 ["] 190	45.403 ^s 335	12.85 ["] 216
18.2	45.277 ^s 369	27.63 ["] 55	22.984 ^s 293	07.37 ["] 174	45.738 ^s 315	15.01 ["] 231
28.2	45.646 ^s 341	27.08 ["] 7	23.277 ^s 269	05.63 ["] 152	46.053 ^s 291	17.32 ["] 240
Aug. 7.1	45.987 ^s 305	27.01 ["] 39	23.546 ^s 241	04.11 ["] 128	46.344 ^s 261	19.72 ["] 243
17.1	46.292 ^s 261	27.40 ["] 85	23.787 ^s 207	02.83 ["] 101	46.605 ^s 225	22.15 ["] 242
27.1	46.553 ^s 212	28.25 ["] 125	23.994 ^s 171	01.82 ["] 74	46.830 ^s 188	24.57 ["] 235
Sept. 6.1	46.765 ^s 161	29.50 ["] 161	24.165 ^s 134	01.08 ["] 47	47.018 ^s 149	26.92 ["] 225
16.0	46.926 ^s 108	31.11 ["] 191	24.299 ^s 97	00.61 ["] 21	47.167 ^s 109	29.17 ["] 211
26.0	47.034 ^s 55	33.02 ["] 210	24.396 ^s 62	00.40 ["] 4	47.276 ^s 72	31.28 ["] 193
Oct. 6.0	47.089 ^s 40	35.12 ["] 222	24.458 ^s 27	00.44 ["] 25	47.348 ^s 37	33.21 ["] 173
16.0	47.094 ^s 80	37.34 ["] 224	24.485 ^s 2	00.69 ["] 43	47.385 ^s 28	34.94 ["] 150
25.9	47.054 ^s 115	39.58 ["] 217	24.483 ^s 28	01.12 ["] 57	47.388 ^s 54	36.44 ["] 126
Nov. 4.9	46.974 ^s 142	41.75 ["] 199	24.455 ^s 51	01.69 ["] 67	47.360 ^s 78	37.70 ["] 99
14.9	46.859 ^s 162	43.74 ["] 175	24.404 ^s 69	02.36 ["] 73	47.306 ^s 98	38.69 ["] 71
24.8	46.717 ^s 175	45.49 ["] 142	24.335 ^s 83	03.09 ["] 75	47.228 ^s 116	39.40 ["] 41
Dec. 4.8	46.555 ^s 182	46.91 ["] 104	24.252 ^s 94	03.84 ["] 74	47.130 ^s 129	39.81 ["] 12
14.8	46.380 ^s 181	47.95 ["] 62	24.158 ^s 102	04.58 ["] 70	47.014 ^s 137	39.93 ["] 19
24.8	46.198 ^s 19	48.57 ["] 106	24.056 ^s 65	05.28 ["] 65	46.885 ^s 137	39.74 ["] 48
34.7	46.017 ^s	48.76 ["]	23.950 ^s	05.93 ["]	46.748 ^s	39.26 ["]
Mean Place	43.772	48.32	21.814	17.66	44.682	16.08
Sec δ , Tan δ	1.361	-0.923	1.003	-0.676	1.142	+0.552
L α , L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω α , ω δ	+0.06	+0.1	+0.01	+0.1	-0.04	+0.1
Authority and Catalogue No.	A. E.	23	A. E.	25	A. N.	35

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Andromedæ.		α Cassiopeiæ.		β Ceti.	
	3·49	K 2	Var.	K o	2·24	K o
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ₀₀ ^m ₃₅	^o ₃₀ ['] ₂₇	^h ₀₀ ^m ₃₆	^o ₅₆ ['] ₀₈	^h ₀₀ ^m ₃₉	^o ₁₈ ['] ₂₂
Jan. 0·7	27·180 ^s	65·00 ^s	23·255 ^s	44·28 ^s	57·664 ^s	67·24 ^s
10·7	27·033 ¹⁴⁷	64·35 ⁶⁵	22·963 ²⁹²	43·94 ³⁴	57·543 ¹²¹	67·72 ⁴⁸
20·7	26·885 ¹⁴⁸	63·42 ⁹³	22·671 ²⁹²	43·10 ⁸⁴	57·424 ¹¹⁹	67·94 ²²
30·7	26·743 ¹⁴²	62·26 ¹¹⁶	22·391 ²⁸⁰	41·79 ¹³¹	57·311 ¹¹³	67·91 ³
Feb. 9·6	26·614 ¹²⁹	60·90 ¹³⁶	22·135 ²⁵⁶	40·07 ¹⁷²	57·210 ¹⁰¹	67·61 ³⁰
19·6	26·505 ¹⁰⁹	59·41 ¹⁴⁹	21·914 ²²¹	38·00 ²⁰⁷	57·125 ⁸⁵	67·04 ⁵⁷
29·6	26·424 ⁸¹	57·86 ¹⁵⁵	21·742 ¹⁷²	35·67 ²³³	57·062 ⁶³	66·19 ⁸⁵
Mar. 10·6	26·377 ⁴⁷	56·32 ¹⁵⁴	21·629 ¹¹³	33·20 ²⁴⁷	57·028 ³⁴	65·08 ¹¹¹
20·5	26·371 ⁶	54·87 ¹⁴⁵	21·583 ⁴⁶	30·68 ²⁵²	57·026 ²	63·71 ¹³⁷
30·5	26·410 ³⁹	53·59 ¹²⁸	21·609 ²⁶	28·23 ²⁴⁵	57·062 ³⁶	62·10 ¹⁶¹
Apr. 9·5	26·498 ⁸⁸	52·53 ¹⁰⁶	21·711 ¹⁰²	25·94 ²²⁹	57·139 ⁷⁷	60·26 ¹⁸⁴
19·4	26·636 ¹³⁸	51·76 ⁷⁷	21·889 ¹⁷⁸	23·92 ²⁰²	57·258 ¹¹⁹	58·23 ²⁰³
29·4	26·821 ¹⁸⁵	51·33 ⁴³	22·139 ²⁵⁰	22·24 ¹⁶⁸	57·419 ¹⁶¹	56·03 ²²⁰
May 9·4	27·051 ²³⁰	51·26 ⁷	22·454 ³¹⁵	20·97 ¹²⁷	57·621 ²⁰²	53·70 ²³³
19·4	27·320 ²⁶⁹	51·56 ³⁰	22·827 ³⁷³	20·16 ⁸¹	57·861 ²⁴⁰	51·30 ²⁴⁰
29·3	27·623 ³⁰³	52·25 ⁶⁹	23·246 ⁴¹⁹	19·83 ³³	58·133 ²⁷²	48·88 ²⁴²
June 8·3	27·951 ³²⁸	53·30 ¹⁰⁵	23·699 ⁴⁵³	20·00 ¹⁷	58·431 ²⁹⁸	46·48 ²⁴⁰
18·3	28·296 ³⁴⁵	54·69 ¹³⁹	24·174 ⁴⁷⁵	20·67 ⁶⁷	58·748 ³¹⁷	44·18 ²³⁰
28·3	28·648 ³⁵²	56·39 ¹⁷⁰	24·658 ⁴⁸⁴	21·82 ¹¹⁵	59·075 ³²⁷	42·02 ²¹⁶
July 8·2	28·998 ³⁵⁰	58·35 ¹⁹⁶	25·138 ⁴⁸⁰	23·42 ¹⁶⁰	59·405 ³³⁰	40·07 ¹⁹⁵
18·2	29·337 ³³⁹	60·52 ²¹⁷	25·603 ⁴⁶⁵	25·43 ²⁰¹	59·729 ³²⁴	38·37 ¹⁷⁰
28·2	29·658 ³²¹	62·84 ²³²	26·040 ⁴³⁷	27·80 ²³⁷	60·039 ³¹⁰	36·96 ¹⁴¹
Aug. 7·1	29·954 ²⁹⁶	65·27 ²⁴³	26·442 ⁴⁰²	30·47 ²⁶⁷	60·327 ²⁸⁸	35·88 ¹⁰⁸
17·1	30·219 ²⁶⁵	67·74 ²⁴⁷	26·800 ³⁵⁸	33·39 ²⁹²	60·588 ²⁶¹	35·15 ⁷³
27·1	30·448 ²²⁹	70·22 ²⁴⁸	27·108 ³⁰⁸	36·50 ³¹¹	60·815 ²²⁷	34·77 ³⁸
Sept. 6·1	30·639 ¹⁹¹	72·64 ²⁴²	27·363 ²⁵⁵	39·73 ³²³	61·007 ¹⁹²	34·74 ³
16·0	30·790 ¹⁵¹	74·96 ²³²	27·560 ¹⁹⁷	43·01 ³²⁸	61·160 ¹⁵³	35·04 ³⁰
26·0	30·902 ¹¹²	77·15 ²¹⁹	27·700 ¹⁴⁰	46·29 ³²⁸	61·273 ¹¹³	35·65 ⁶¹
Oct. 6·0	30·976 ⁷⁴	79·17 ²⁰²	27·783 ⁸³	49·50 ³²¹	61·348 ⁷⁵	36·52 ⁸⁷
16·0	31·013 ³⁷	80·99 ¹⁸²	27·809 ²⁶	52·57 ³⁰⁷	61·387 ³⁹	37·59 ¹⁰⁷
25·9	31·016 ³	82·58 ¹⁵⁹	27·782 ²⁷	55·44 ²⁸⁷	61·392 ⁵	38·81 ¹²²
Nov. 4·9	30·989 ²⁷	83·92 ¹³⁴	27·704 ⁷⁸	58·06 ²⁶²	61·368 ²⁴	40·10 ¹²⁹
14·9	30·934 ⁵⁵	85·00 ¹⁰⁸	27·578 ¹²⁶	60·36 ²³⁰	61·318 ⁵⁰	41·41 ¹³¹
24·8	30·855 ⁷⁹	85·79 ⁷⁹	27·409 ¹⁶⁹	62·28 ¹⁹²	61·247 ⁷¹	42·67 ¹²⁶
Dec. 4·8	30·755 ¹⁰⁰	86·27 ⁴⁸	27·202 ²⁰⁷	63·77 ¹⁴⁹	61·159 ⁸⁸	43·84 ¹¹⁷
14·8	30·637 ¹¹⁸	86·44 ¹⁷	26·962 ²⁴⁰	64·79 ¹⁰²	61·057 ¹⁰²	44·85 ¹⁰¹
24·8	30·506 ¹³¹	86·30 ¹⁴	26·698 ²⁶⁴	65·32 ⁵³	60·945 ¹¹²	45·68 ⁸³
34·7	30·365 ¹⁴¹	85·85 ⁴⁵	26·416 ²⁸²	65·33 ¹	60·828 ¹¹⁷	46·28 ⁶⁰
Mean Place	28·272	62·00	24·481	34·26	58·572	53·39
Sec δ , Tan δ	1·160	+0·588	1·795	+1·491	1·054	-0·332
L α , L δ	0·00	+0·4	+0·01	+0·4	0·00	+0·4
ω α , ω δ	-0·04	+0·2	-0·10	+0·2	+0·02	+0·2
Authority and Catalogue No.	A. E.	36	A. E.	37	A. E.	39

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Date of Mean Solar Time	♐ Piscium.		♑ 20 Ceti.		♒ Cassiopeiæ.	
	4.55	K 5	4.92	K 0	2.25	B 0 p
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 00 44	[°] ['] 7 11	^h ^m 00 49	[°] ['] 1 31	^h ^m 00 52	[°] ['] 60 19
Jan. 0.3	55.690 ¹¹²	31.92 ⁶⁷	18.687 ¹¹¹	73.37 ⁶⁵	19.64 ³⁴	49.25 ⁶
10.7	55.578 ¹¹⁴	31.25 ⁶⁹	18.576 ¹¹³	74.02 ⁵⁷	19.30 ³⁴	49.19 ⁵⁹
20.7	55.464 ¹¹¹	30.56 ⁶⁹	18.463 ¹¹⁰	74.59 ⁴⁷	18.96 ³⁴	48.60 ¹¹⁰
30.7	55.353	29.87	18.353	75.06	18.62	47.50
Feb. 9.6	55.252 ¹⁰¹	29.22 ⁶⁵	18.251 ¹⁰²	75.41 ³⁵	18.30 ³²	45.93 ¹⁵⁷
19.6	55.165 ⁸⁷	28.64 ⁵⁸	18.164 ⁸⁷	75.61 ²⁰	18.02 ²⁸	43.97 ¹⁹⁶
29.6	55.099 ⁶⁶	28.16 ⁴⁸	18.097 ⁶⁷	75.65 ⁴	17.80 ²²	41.70 ²²⁷
Mar. 10.6	55.060 ³⁹	27.83 ³³	18.055 ⁴²	75.49 ¹⁶	17.64 ¹⁶	39.22 ²⁴⁸
20.5	55.055 ⁵	27.69 ¹⁴	18.046 ⁹	75.12 ³⁷	17.55 ⁹	36.64 ²⁵⁸
30.5	55.087 ³²	27.76 ⁷	18.074 ²⁸	74.52 ⁶⁰	17.54 ¹	34.07 ²⁵⁷
Apr. 9.5	55.160 ⁷³	28.08 ³²	18.142 ⁶⁸	73.67 ⁸⁵	17.62 ⁸	31.62 ²⁴⁵
19.5	55.276 ¹¹⁶	28.65 ⁵⁷	18.252 ¹¹⁰	72.58 ¹⁰⁹	17.78 ¹⁶	29.38 ²²⁴
29.4	55.435 ¹⁵⁹	29.50 ⁸⁵	18.403 ¹⁵¹	71.25 ¹³³	18.03 ²⁵	27.45 ¹⁹³
May 9.4	55.634 ¹⁹⁹	30.61 ¹¹¹	18.596 ¹⁹³	69.70 ¹⁵⁵	18.35 ³²	25.90 ¹⁵⁵
19.4	55.870 ²³⁶	31.96 ¹³⁵	18.824 ²²⁸	67.96 ¹⁷⁴	18.74 ³⁹	24.79 ¹¹¹
29.3	56.137 ²⁶⁷	33.54 ¹⁵⁸	19.086 ²⁶²	66.06 ¹⁹⁰	19.19 ⁴⁵	24.15 ⁶⁴
June 8.3	56.429 ²⁹²	35.30 ¹⁷⁶	19.372 ²⁸⁶	64.04 ²⁰²	19.68 ⁴⁹	24.01 ¹⁴
18.3	56.738 ³⁰⁹	37.21 ¹⁹¹	19.677 ³⁰⁵	61.96 ²⁰⁸	20.19 ⁵¹	24.38 ³⁷
28.3	57.056 ³¹⁸	39.21 ²⁰⁰	19.993 ³¹⁶	59.87 ²⁰⁹	20.72 ⁵³	25.24 ⁸⁶
July 8.2	57.375 ³¹⁹	41.26 ²⁰⁵	20.310 ³¹⁷	57.81 ²⁰⁶	21.26 ⁵⁴	26.57 ¹³³
18.2	57.688 ³¹³	43.30 ²⁰⁴	20.623 ³¹³	55.85 ¹⁹⁶	21.78 ⁵²	28.35 ¹⁷⁸
28.2	57.987 ²⁹⁹	45.28 ¹⁹⁸	20.922 ²⁹⁹	54.03 ¹⁸²	22.27 ⁴⁹	30.52 ²¹⁷
Aug. 7.2	58.264 ²⁷⁷	47.16 ¹⁸⁸	21.201 ²⁷⁹	52.39 ¹⁶⁴	22.73 ⁴⁶	33.04 ²⁵²
17.1	58.515 ²⁵¹	48.89 ¹⁷³	21.454 ²⁵³	50.98 ¹⁴¹	23.15 ⁴²	35.85 ²⁸¹
27.1	58.735 ²²⁰	50.43 ¹⁵⁴	21.678 ²²⁴	49.81 ¹¹⁷	23.52 ³⁷	38.90 ³⁰⁵
Sept. 6.1	58.922 ¹⁸⁷	51.77 ¹³⁴	21.868 ¹⁹⁰	48.90 ⁹¹	23.82 ³⁰	42.12 ³²²
16.0	59.073 ¹⁵¹	52.90 ¹¹³	22.024 ¹⁵⁶	48.26 ⁶⁴	24.07 ²⁵	45.44 ³³²
26.0	59.188 ¹¹⁵	53.79 ⁸⁹	22.143 ¹¹⁹	47.89 ³⁷	24.25 ¹⁸	48.79 ³³⁵
Oct. 6.0	59.269 ⁸¹	54.45 ⁶⁶	22.228 ⁸⁵	47.75 ¹⁴	24.37 ¹²	52.12 ³³³
16.0	59.318 ⁴⁹	54.89 ⁴⁴	22.280 ⁵²	47.85 ¹⁰	24.43 ⁶	55.36 ³²⁴
25.9	59.336 ¹⁸	55.12 ²³	22.301 ²¹	48.13 ²⁸	24.43 ⁷	58.45 ³⁰⁹
Nov. 4.9	59.327 ⁹	55.17 ⁵	22.294 ⁷	48.58 ⁴⁵	24.36 ⁷	61.31 ²⁸⁶
14.9	59.294 ³³	55.06 ¹¹	22.263 ³¹	49.14 ⁵⁶	24.24 ¹²	63.87 ²⁵⁶
24.9	59.240 ⁵⁴	54.80 ²⁶	22.211 ⁵²	49.78 ⁶⁴	24.07 ¹⁷	66.08 ²²¹
Dec. 4.8	59.169 ⁷¹	54.41 ³⁹	22.141 ⁷⁰	50.48 ⁷⁰	23.85 ²²	67.88 ¹⁸⁰
14.8	59.082 ⁸⁷	53.93 ⁴⁸	22.056 ⁸⁵	51.19 ⁷¹	23.59 ²⁶	69.21 ¹³³
24.8	58.984 ⁹⁸	53.36 ⁵⁷	21.959 ⁹⁷	51.89 ⁷⁰	23.29 ³⁰	70.04 ⁸³
34.7	58.878 ¹⁰⁶	52.74 ⁶²	21.855 ¹⁰⁴	52.55 ⁶⁶	22.96 ³³	70.33 ²⁹
Mean Place	56.651	36.78	19.593	65.47	20.770	38.24
Sec δ, Tan δ	1.008	+0.126	1.000	-0.027	2.020	+1.755
L a, L δ	0.00	+0.4	0.00	+0.4	+0.01	+0.4
ω a, ω δ	-0.01	+0.2	0.00	+0.2	-0.11	+0.2
Authority and Catalogue No.	A. N.	47		52	A. E.	53

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	μ Andromedæ. 3·94 A 2		α Sculptoris. 4·39 B 5		ϵ Piscium. 4·45 K o	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 00 ^m 52	^s 38 06	^h 00 ^m 55	^s 29 44	^h 00 ^m 59	^s 7 30
Jan. 0·8	43·918 ^s	38·61	07·529 ^s	63·44	11·323 ^s	05·92
10·7	43·746 ¹⁷²	38·18 43	07·385 ¹⁴⁴	63·85 41	11·210 ¹¹³	05·28 64
20·7	43·570 ¹⁷⁶	37·40 78	07·240 ¹⁴⁵	63·90 ⁵	11·093 ¹¹⁷	04·62 66
30·7	43·397 ¹⁷³	36·30 110	07·100 ¹⁴⁰	63·59 31	10·976 ¹¹⁷	03·96 66
Feb. 9·7	43·235 ¹⁶²	34·93 137	06·971 ¹²⁹	62·91 68	10·866 ¹¹⁰	03·33 63
19·6	43·093 ¹⁴²	33·35 158	06·859 ¹¹²	61·88 103	10·769 ⁹⁷	02·77 56
29·6	42·978 ¹¹⁵	31·62 173	06·770 ⁸⁹	60·51 137	10·692 ⁷⁷	02·31 46
Mar. 10·6	42·900 ⁷⁸	29·83 179	06·709 ⁶¹	58·83 168	10·640 ⁵²	01·98 33
20·5	42·868 ³²	28·06 177	06·684 ²⁵	56·87 196	10·621 ¹⁹	01·83 ¹⁵
30·5	42·885 ¹⁷	26·40 166	06·698 ¹⁴	54·65 222	10·638 ¹⁷	01·89 ⁶
Apr. 9·5	42·956 ⁷¹	24·93 147	06·756 ⁵⁸	52·21 244	10·697 ⁵⁹	02·18 29
19·5	43·081 ¹²⁵	23·71 122	06·858 ¹⁰²	49·60 261	10·799 ¹⁰²	02·72 54
29·4	43·260 ¹⁷⁹	22·81 90	07·007 ¹⁴⁹	46·87 273	10·944 ¹⁴⁵	03·53 81
May 9·4	43·490 ²³⁰	22·27 54	07·201 ¹⁹⁴	44·07 280	11·130 ¹⁸⁶	04·59 106
19·4	43·765 ²⁷⁵	22·12 ¹⁵	07·437 ²³⁶	41·26 281	11·355 ²²⁵	05·90 131
29·4	44·079 ³¹⁴	22·37 ²⁵	07·710 ²⁷³	38·51 275	11·613 ²⁵⁸	07·44 154
June 8·3	44·422 ³⁴³	23·03 66	08·014 ³⁰⁴	35·86 265	11·898 ²⁸⁵	09·16 172
18·3	44·785 ³⁶³	24·08 105	08·341 ³²⁷	33·40 246	12·203 ³⁰⁵	11·03 187
28·3	45·160 ³⁷⁵	25·48 140	08·683 ³⁴²	31·18 222	12·519 ³¹⁶	13·00 197
July 8·2	45·536 ³⁷⁶	17·22 174	09·032 ³⁴⁹	29·25 193	12·839 ³²⁰	15·03 203
18·2	45·903 ³⁶⁷	29·24 202	09·377 ³⁴⁵	27·67 158	13·154 ³¹⁵	17·05 202
28·2	46·254 ³⁵¹	31·48 224	09·711 ³³⁴	26·47 120	13·457 ³⁰³	19·02 197
Aug. 7·2	46·581 ³²⁷	33·91 243	10·026 ³¹⁵	25·68 79	13·742 ²⁸⁵	20·90 188
17·1	46·877 ²⁹⁶	36·47 256	10·314 ²⁸⁸	25·33 ³⁵	14·001 ²⁵⁹	22·63 173
27·1	47·138 ²⁶¹	39·09 262	10·569 ²⁵⁵	25·40 7	14·232 ²³¹	24·18 155
Sept. 6·1	47·360 ²²²	41·73 264	10·786 ²¹⁷	25·88 48	14·431 ¹⁹⁹	25·53 135
16·1	47·541 ¹⁸¹	44·34 261	10·963 ¹⁷⁷	26·75 87	14·595 ¹⁶⁴	26·66 113
26·0	47·680 ¹³⁹	46·87 253	11·097 ¹³⁴	27·96 121	14·725 ¹³⁰	27·56 90
Oct. 6·0	47·779 ⁹⁹	49·27 240	11·189 ⁹²	29·43 147	14·820 ⁹⁵	28·24 68
16·0	47·838 ⁵⁹	51·51 224	11·240 ⁵¹	31·12 169	14·883 ⁶³	28·69 45
25·9	47·860 ²²	53·55 204	11·252 ¹²	32·92 180	14·915 ³²	28·94 25
Nov. 4·9	47·847 ¹³	55·36 181	11·230 ²²	34·77 185	14·919 ⁴	29·00 ⁶
14·9	47·800 ⁴⁷	56·89 153	11·176 ⁵⁴	36·58 181	14·898 ²¹	28·96 10
24·9	47·723 ⁷⁷	58·12 123	11·096 ⁸⁰	38·26 168	14·854 ⁴⁴	28·65 25
Dec. 4·8	47·620 ¹⁰³	59·02 90	10·994 ¹⁰²	39·77 151	14·791 ⁶³	28·29 36
14·8	47·493 ¹²⁷	59·57 55	10·875 ¹¹⁹	41·02 125	14·710 ⁸¹	27·83 46
24·8	47·346 ¹⁴⁷	59·76 ¹⁹	10·743 ¹³²	41·97 95	14·616 ⁹⁴	27·29 54
34·8	47·185 ¹⁶¹	59·57 ¹⁹	10·603 ¹⁴⁰	42·59 62	14·511 ¹⁰⁵	26·69 60
Mean Place	44·934	33·09	08·273	46·22	12·203	10·49
Sec δ , Tan δ	1·271	+0·784	1·152	-0·571	1·009	+0·132
L α , L δ	0·00	+0·4	0·00	+0·4	0·00	+0·4
ω α , ω δ	-0·05	+0·2	+0·04	+0·2	-0·01	+0·3
Authority and Catalogue No.	A. E.	55	A. E.	57	A. E.	59

APPARENT PLACES OF STARS, 1928. 281

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	72 Piscium.		β Phœnicis m.		β Andromedæ.	
	5.65	F 2	3.35	K o	2.37	M a
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 01 01	^o ['] 14 33	^h ^m 01 02	^o ['] 47 05	^h ^m 01 05	^o ['] 35 14
Jan. 0.8	16.187 ⁵	31.76 ⁶⁰	51.920 ⁵	95.11 ²²	40.659 ⁵	26.22 ³⁶
10.7	16.068 ¹¹⁹	31.16 ⁷¹	51.702 ²¹⁸	95.33 ²⁹	40.500 ¹⁵⁹	25.86 ⁶⁸
20.7	15.945 ¹²³	30.45 ⁷⁸	51.485 ²⁰⁹	95.04 ⁷⁸	40.334 ¹⁶⁷	25.18 ⁹⁷
30.7	15.821 ¹²⁴	29.67 ⁸²	51.276 ¹⁹³	94.26 ¹²⁵	40.167 ¹⁵⁹	24.21 ¹²³
Feb. 9.7	15.704 ¹¹⁷	28.85 ⁸²	51.083 ¹⁷¹	93.01 ¹⁶⁹	40.008 ¹⁴³	22.98 ¹⁴³
19.6	15.600 ⁸³	28.03 ⁷⁸	50.912 ¹⁴¹	91.32 ²¹¹	39.865 ¹¹⁸	21.55 ¹⁵⁵
29.6	15.517 ⁵⁸	27.25 ⁶⁹	50.771 ¹⁰⁴	89.21 ²⁴⁵	39.747 ⁸⁵	20.00 ¹⁶²
Mar. 10.6	15.459 ²³	26.56 ⁵⁴	50.667 ⁶¹	86.76 ²⁷⁶	39.662 ⁴⁴	18.38 ¹⁶¹
20.5	15.436 ¹⁵	26.02 ³⁷	50.606 ¹¹	84.00 ³⁰⁰	39.618 ⁴	16.77 ¹⁵⁰
30.5	15.451 ⁵⁸	25.65 ¹⁴	50.595 ⁴⁰	81.00 ³¹⁸	39.622 ⁵⁴	15.27 ¹³³
Apr. 9.5	15.509 ¹⁰²	25.51 ¹²	50.635 ⁹⁶	77.82 ³³⁰	39.676 ¹⁰⁸	13.94 ¹⁰⁹
19.5	15.611 ¹⁴⁷	25.63 ⁴⁰	50.731 ¹⁵²	74.52 ³³⁶	39.784 ¹⁶²	12.85 ⁸⁰
29.4	15.758 ¹⁹⁰	26.03 ⁶⁸	50.883 ²⁰⁷	71.16 ³³⁵	39.946 ²¹¹	12.05 ⁴⁶
May 9.4	15.948 ²²⁹	26.71 ⁹⁶	51.090 ²⁵⁹	67.81 ³²⁵	40.157 ²⁵⁷	11.59 ⁹
19.4	16.177 ²⁶³	27.67 ¹²⁴	51.349 ³⁰⁶	64.56 ³⁰⁹	40.414 ²⁹⁶	11.50 ²⁸
29.4	16.440 ²⁹⁰	28.91 ¹⁴⁸	51.655 ³⁴⁶	61.47 ²⁸⁷	40.710 ³²⁸	11.78 ⁶⁶
June 8.3	16.730 ³¹⁰	30.39 ¹⁶⁹	52.001 ³⁷⁷	58.60 ²⁵⁷	41.038 ³⁵⁰	12.44 ¹⁰³
18.3	17.040 ³²²	32.08 ¹⁸⁴	52.378 ³⁹⁹	56.03 ²¹⁹	41.388 ³⁶⁴	13.47 ¹³⁷
28.3	17.362 ³²⁵	33.92 ¹⁹⁷	52.777 ⁴¹¹	53.84 ¹⁷⁸	41.752 ³⁶⁷	14.84 ¹⁶⁷
July 8.2	17.687 ³²⁰	35.89 ²⁰⁴	53.188 ⁴⁰²	52.06 ⁸²	42.119 ³⁴⁸	16.51 ¹⁹³
18.2	18.007 ³⁰⁹	37.93 ²⁰⁵	53.600 ³⁸²	50.75 ³⁰	42.481 ³²⁷	18.44 ²¹⁴
28.2	18.316 ²⁸⁹	39.98 ²⁰²	54.002 ³⁵²	49.93 ²²	42.829 ³⁰⁰	20.58 ²³⁰
Aug. 7.2	18.605 ²⁶⁶	42.00 ¹⁹⁴	54.384 ³¹⁴	49.63 ¹²⁰	43.156 ²⁶⁷	22.88 ²⁴⁷
17.1	18.871 ²⁰²	43.94 ¹⁶⁷	54.736 ²⁶⁸	49.85 ¹⁶²	43.456 ¹⁹³	25.29 ²⁴¹
27.1	19.106 ²³⁵	45.77 ¹⁵⁰	55.050 ²¹⁸	50.58 ¹⁹⁸	43.723 ¹⁵³	27.76 ²²⁴
Sept. 6.1	19.308 ¹⁶⁹	47.44 ¹³⁰	55.318 ¹⁰⁹	51.78 ²⁴³	43.954 ⁷⁶	30.24 ²⁰⁸
16.1	19.477 ¹³⁴	48.94 ⁸⁸	55.536 ⁵³	53.40 ²⁵²	44.147 ⁴⁰	32.68 ¹⁸⁹
26.0	19.611 ⁹⁹	50.24 ¹¹⁰	55.701 ⁵³	55.38 ²⁴⁹	44.300 ⁶	35.04 ¹⁶⁶
Oct. 6.0	19.710 ⁶⁶	51.34 ⁸⁸	55.810 ⁵³	57.63 ²²⁵	44.414 ¹¹⁴	37.28 ²²⁴
16.0	19.776 ³⁶	52.22 ⁶⁸	55.863 ¹	60.06 ²⁴³	44.490 ⁷⁶	39.36 ²⁰⁸
25.9	19.812 ⁷	52.90 ⁴⁷	55.864 ⁴⁸	62.58 ²⁴⁹	44.530 ⁴⁰	41.25 ¹⁸⁹
Nov. 4.9	19.819 ¹⁹	53.37 ²⁹	55.816 ⁹¹	65.07 ²³⁶	44.536 ²⁸	42.91 ¹⁴²
14.9	19.800 ⁴³	53.66 ¹⁰	55.725 ¹²⁹	67.43 ²¹³	44.508 ⁵⁷	44.33 ¹¹⁶
24.9	19.757 ⁶⁴	53.76 ⁷	55.596 ¹⁶⁰	69.56 ¹⁸²	44.451 ⁸⁵	45.49 ⁸⁵
Dec. 4.8	19.693 ⁸²	53.69 ²³	55.436 ¹⁸⁵	71.38 ¹⁴²	44.366 ¹⁰⁹	46.34 ⁵²
14.8	19.611 ⁹⁹	53.46 ³⁸	55.251 ²⁰³	72.80 ⁹⁹	44.257 ¹³¹	46.86 ²⁰
24.8	19.512 ¹⁰⁷	53.08 ⁵¹	55.048 ²¹³	73.79 ⁵¹	44.126 ¹⁴⁷	47.06 ¹⁴
34.8	19.405	52.57	54.835	74.30	43.979	46.92
Mean Place	17.077	33.82	52.439	73.50	41.588	21.46
Sec δ , Tan δ	1.033	+0.260	1.469	-1.076	1.224	+0.706
L a, L δ	0.00	+0.4	-0.01	+0.4	+0.01	+0.4
ω a, ω δ	-0.02	+0.3	+0.07	+0.3	-0.05	+0.3
Authority and Catalogue No.	61		A. E. 63		A. E. 69	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ζ^1 Piscium.		θ Ceti.		δ Cassiopeiae.	
	5.57	A 5	3.83	K 0	2.80	A 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 01 09	[°] ['] 7 11	^h ^m 01 20	[°] ['] 8 32	^h ^m 01 21	[°] ['] 59 51
Jan. 0.8	^s 57.170	37.83	^s 24.727	85.66	^s 04.396	53.43
10.8	57.057 ¹¹³	37.20 ⁶³	24.614 ¹¹³	86.34 ⁶⁸	04.077 ³¹⁹	53.72 ²⁹
20.7	56.939 ¹¹⁸	36.57 ⁶³	24.493 ¹²¹	86.86 ⁵²	03.740 ³³⁷	53.48 ²⁴
30.7	56.819 ¹²⁰	35.93 ⁶⁴	24.370 ¹²³	87.21 ³⁵	03.401 ³³⁹	52.73 ⁷⁵
Feb. 9.7	56.704 ¹¹⁵	35.33 ^{60.}	24.251 ¹¹⁹	87.35 ^{14.}	03.073 ³²⁸	51.50 ¹²³
19.6	56.600 ¹⁰⁴	34.80 ⁵³	24.141 ¹¹⁰	87.29 ⁶	02.772 ³⁰¹	49.85 ¹⁶⁵
29.6	56.514 ⁸⁶	34.37 ⁴³	24.048 ⁹³	87.01 ²⁸	02.513 ²⁵⁹	47.84 ²⁰¹
Mar. 10.6	56.454 ⁶⁰	34.06 ³¹	23.978 ⁷⁰	86.49 ⁵²	02.311 ²⁰²	45.57 ²²⁷
20.6	56.424 ³⁰	33.93 ¹³	23.938 ⁴⁰	85.74 ⁷⁵	02.176 ¹³⁵	43.14 ²⁴³
30.5	56.432 ⁸	34.01 ⁸	23.933 ⁵	84.74 ¹⁰⁰	02.119 ⁵⁷	40.66 ²⁴⁸
Apr. 9.5	56.480 ⁴⁸	34.31 ³⁰	23.967 ³⁴	83.50 ¹²⁴	02.146 ²⁷	38.23 ²⁴³
19.5	56.572 ⁹²	34.86 ⁵⁵	24.043 ⁷⁶	82.03 ¹⁴⁷	02.259 ¹¹³	35.95 ²²⁸
29.5	56.707 ¹³⁵	35.66 ⁸⁰	24.164 ¹²¹	80.34 ¹⁶⁹	02.457 ¹⁹⁸	33.91 ²⁰⁴
May 9.4	56.885 ¹⁷⁸	36.73 ¹⁰⁷	24.327 ¹⁶³	78.46 ¹⁸⁸	02.734 ²⁷⁷	32.20 ¹⁷¹
19.4	57.102 ²¹⁷	38.03 ¹³⁰	24.530 ²⁰³	76.42 ²⁰⁴	03.084 ³⁵⁰	30.87 ¹³³
29.4	57.354 ²⁵²	39.55 ¹⁵²	24.769 ²³⁹	74.27 ²¹⁵	03.496 ⁴¹²	29.97 ⁹⁰
June 8.3	57.633 ²⁷⁹	41.26 ¹⁷¹	25.039 ²⁷⁰	72.06 ²²¹	03.958 ⁴⁶²	29.54 ⁴³
18.3	57.934 ³⁰¹	43.11 ¹⁸⁵	25.331 ²⁹²	69.83 ²²³	04.458 ⁵⁰⁰	29.59 ⁵
28.3	58.249 ³¹⁵	45.07 ¹⁹⁶	25.640 ³⁰⁹	67.64 ²¹⁹	04.983 ⁵²⁵	30.12 ⁵³
July 8.3	58.568 ³¹⁹	47.07 ²⁰⁰	25.957 ³¹⁷	65.55 ²⁰⁹	05.517 ⁵³⁴	31.12 ¹⁰⁰
18.2	58.885 ³¹⁷	49.07 ²⁰⁰	26.274 ³¹⁷	63.61 ¹⁹⁴	06.048 ⁵³¹	32.56 ¹⁴⁴
28.2	59.191 ³⁰⁶	51.01 ¹⁹⁴	26.584 ³¹⁰	61.87 ¹⁷⁴	06.563 ⁵¹⁵	34.41 ¹⁸⁵
Aug. 7.2	59.480 ²⁸⁹	52.86 ¹⁸⁵	26.878 ²⁹⁴	60.37 ¹⁵⁰	07.052 ⁴⁸⁹	36.62 ²²¹
17.2	59.746 ²⁶⁶	54.58 ¹⁷²	27.151 ²⁷³	59.16 ¹²¹	07.505 ⁴⁵³	39.15 ²⁵³
27.1	59.985 ²³⁹	56.11 ¹⁵³	27.398 ²⁴⁷	58.25 ⁹¹	07.913 ⁴⁰⁸	41.94 ²⁷⁹
Sept. 6.1	60.193 ²⁰⁸	57.43 ¹³²	27.615 ²¹⁷	57.65 ⁶⁰	08.271 ³⁵⁸	44.94 ³⁰⁰
16.1	60.367 ¹⁷⁴	58.53 ¹¹⁰	27.799 ¹⁸⁴	57.37 ²⁸	08.574 ³⁰³	48.07 ³¹³
26.0	60.508 ¹⁴¹	59.41 ⁸⁸	27.949 ¹⁵⁰	57.40 ³	08.819 ²⁴⁵	51.29 ³²²
Oct. 6.0	60.615 ¹⁰⁷	60.05 ⁶⁴	28.064 ¹¹⁵	57.70 ³⁰	09.003 ¹⁸⁴	54.54 ³²⁵
16.0	60.690 ⁷⁵	60.48 ⁴³	28.145 ⁸¹	58.24 ⁵⁴	09.126 ¹²³	57.74 ³²⁰
26.0	60.733 ⁴³	60.70 ²²	28.194 ⁴⁹	58.98 ⁷⁴	09.187 ⁶¹	60.83 ³⁰⁹
Nov. 4.9	60.748 ¹⁵	60.74 ⁴	28.214 ²⁰	59.86 ⁸⁸	09.188 ¹	63.75 ²⁹²
14.9	60.738 ¹⁰	60.62 ¹²	28.206 ⁸	60.84 ⁹⁸	09.129 ⁵⁹	66.44 ²⁶⁹
24.9	60.704 ³⁴	60.36 ²⁶	28.173 ³³	61.86 ¹⁰²	09.012 ¹¹⁷	68.82 ²³⁸
Dec. 4.9	60.648 ⁵⁶	59.99 ³⁷	28.118 ⁵⁵	62.88 ¹⁰²	08.842 ¹⁷⁰	70.83 ²⁰¹
14.8	60.573 ⁷⁵	59.52 ⁴⁷	28.043 ⁷⁵	63.85 ⁹⁷	08.621 ²²¹	72.43 ¹⁶⁰
24.8	60.483 ⁹⁰	58.98 ⁵⁴	27.952 ⁹¹	64.73 ⁸⁸	08.358 ²⁶³	73.57 ¹¹⁴
34.8	60.380 ¹⁰³	58.39 ⁵⁹	27.847 ¹⁰⁵	65.49 ⁷⁶	08.060 ²⁹⁸	74.19 ⁶²
Mean Place	57.986	42.37	25.418	75.78	05.268	42.41
Sec δ , Tan δ	1.008	+0.126	1.011	-0.150	1.992	+1.722
L α , L δ	0.00	+0.4	0.00	+0.4	+0.02	+0.4
ω α , ω δ	-0.01	+0.3	+0.01	+0.3	-0.11	+0.3
Authority and Catalogue No.	74		A. E. 81		A. E. 83	

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Phœnicis.		η Piscium.		α Eridani.	
	3.40	K 5	3.72	G 5	0.60	B 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 01 25	^h ^m 43 40	^h ^m 01 27	^h ^m 14 58	^h ^m 01 34	^h ^m 57 35
Jan. 0.8	14.086 ⁵	91.82	36.843 ⁵	29.15	62.223 ⁵	90.05
10.8	13.884 ²⁰²	92.33 ⁵¹	36.727 ¹¹⁶	28.64 ⁵¹	61.910 ³¹³	90.47 ⁴²
20.7	13.677 ²⁰⁷	92.35 ²	36.602 ¹²⁵	28.03 ⁶¹	61.589 ³²¹	90.32 ¹⁵
30.7	13.472 ²⁰⁵	91.90 ⁴⁵	36.471 ¹³¹	27.34 ⁶⁹	61.271 ³¹⁸	89.62 ⁷⁰
Feb. 9.7	13.276 ¹⁹⁶	90.98 ⁹²	36.342 ¹²⁹	26.61 ⁷³	60.967 ³⁰⁴	88.37 ¹²⁵
19.6	13.096 ¹⁸⁰	89.60 ¹³⁸	36.222 ¹²⁰	25.87 ⁷⁴	60.686 ²⁸¹	86.62 ¹⁷⁵
29.6	12.940 ¹⁵⁶	87.80 ¹⁸⁰	36.119 ¹⁰³	25.16 ⁷¹	60.437 ²⁴⁹	84.40 ²²²
Mar. 10.6	12.816 ¹²⁴	85.63 ²¹⁷	36.039 ⁸⁰	24.51 ⁶⁵	60.231 ²⁰⁶	81.78 ²⁶²
20.6	12.730 ⁸⁶	83.12 ²⁵¹	35.991 ⁴⁸	23.97 ⁵⁴	60.076 ¹⁵⁵	78.82 ²⁹⁶
30.5	12.689 ⁴¹	80.33 ²⁷⁹	35.980 ¹¹	23.60 ³⁷	59.979 ⁹⁷	75.58 ³²⁴
Apr. 9.5	12.698 ⁹	77.31 ³⁰²	36.011 ³¹	23.43 ¹⁷	59.946 ³³	72.12 ³⁴⁶
19.5	12.760 ⁶²	74.13 ³¹⁸	36.087 ⁷⁶	23.49 ⁶	59.981 ³⁵	68.52 ³⁶⁰
29.5	12.876 ¹¹⁶	70.85 ³²⁸	36.208 ¹²¹	23.81 ³²	60.087 ¹⁰⁶	64.86 ³⁶⁶
May 9.4	13.047 ¹⁷¹	67.53 ³³²	36.375 ¹⁶⁷	24.39 ⁵⁸	60.263 ¹⁷⁶	61.22 ³⁶⁴
19.4	13.270 ²²³	64.26 ³²⁷	36.584 ²⁰⁹	25.25 ⁸⁶	60.507 ²⁴⁴	57.67 ³⁵⁵
29.4	13.541 ²⁷¹	61.09 ³¹⁷	36.829 ²⁴⁵	26.36 ¹¹¹	60.815 ³⁰⁸	54.29 ³³⁸
June 8.3	13.852 ³¹¹	58.11 ²⁹⁸	37.106 ²⁷⁷	27.72 ¹³⁶	61.179 ³⁶⁴	51.16 ³¹³
18.3	14.197 ³⁴⁵	55.39 ²⁷²	37.407 ³⁰¹	29.29 ¹⁵⁷	61.590 ⁴¹¹	48.35 ²⁸¹
28.3	14.568 ³⁷¹	52.99 ²⁴⁰	37.724 ³¹⁷	31.02 ¹⁷³	62.039 ⁴⁴⁹	45.94 ²⁴¹
July 8.3	14.953 ³⁸⁵	50.97 ²⁰²	38.048 ³²⁴	32.88 ¹⁸⁶	62.513 ⁴⁷⁴	43.98 ¹⁹⁶
18.2	15.345 ³⁹²	49.38 ¹⁵⁹	38.372 ³²⁴	34.82 ¹⁹⁴	63.000 ⁴⁸⁷	42.53 ¹⁴⁵
28.2	15.731 ³⁸⁶	48.28 ¹¹⁰	38.689 ³¹⁷	36.78 ¹⁹⁶	63.487 ⁴⁸⁷	41.62 ⁹¹
Aug. 7.2	16.102 ³⁷¹	47.68 ⁶⁰	38.990 ³⁰¹	38.73 ¹⁹⁵	63.961 ⁴⁷⁴	41.27 ³⁵
17.2	16.451 ³⁴⁹	47.59 ⁹	39.271 ²⁸¹	40.61 ¹⁸⁸	64.409 ⁴⁴⁸	41.50 ²³
27.1	16.767 ³¹⁶	48.02 ⁴³	39.526 ²⁵⁵	42.38 ¹⁷⁷	64.820 ⁴¹¹	42.29 ⁷⁹
Sept. 6.1	17.044 ²⁷⁷	48.94 ⁹²	39.751 ²²⁵	44.02 ¹⁶⁴	65.182 ³⁶²	43.61 ¹³²
16.1	17.276 ²³²	50.32 ¹³⁸	39.944 ¹⁹³	45.48 ¹⁴⁶	65.487 ³⁰⁵	45.41 ¹⁸⁰
26.0	17.461 ¹⁸⁵	52.09 ¹⁷⁷	40.105 ¹⁶¹	46.77 ¹²⁹	65.729 ²⁴²	47.63 ²²²
Oct. 6.0	17.595 ¹³⁴	54.16 ²⁰⁷	40.232 ¹²⁷	47.86 ¹⁰⁹	65.903 ¹⁷⁴	50.17 ²⁵⁴
16.0	17.680 ⁸⁵	56.48 ²³²	40.327 ⁹⁵	48.74 ⁸⁸	66.006 ¹⁰³	52.93 ²⁷⁶
26.0	17.715 ³⁵	58.93 ²⁴⁵	40.390 ⁶³	49.43 ⁶⁹	66.040 ³⁴	55.81 ²⁸⁸
Nov. 4.9	17.703 ¹²	61.41 ²⁴⁸	40.424 ³⁴	49.93 ⁵⁰	66.005 ³⁵	58.69 ²⁸⁸
14.9	17.648 ⁵⁵	63.82 ²⁴¹	40.430 ⁶	50.24 ³¹	65.907 ⁹⁸	61.45 ²⁷⁶
24.9	17.554 ⁹⁴	66.06 ²²⁴	40.410 ²⁰	50.38 ¹⁴	65.752 ¹⁵⁵	63.97 ²⁵²
Dec. 4.9	17.427 ¹²⁷	68.04 ¹⁹⁸	40.365 ⁴⁵	50.36 ²	65.547 ²⁰⁵	66.17 ²²⁰
14.8	17.273 ¹⁵⁴	69.68 ¹⁶⁴	40.298 ⁶⁷	50.20 ¹⁶	65.299 ²⁴⁸	67.94 ¹⁷⁷
24.8	17.096 ¹⁷⁷	70.92 ¹²⁴	40.211 ⁸⁷	49.90 ³⁰	65.019 ²⁸⁰	69.23 ¹²⁹
34.8	16.903 ¹⁹³	71.70 ⁷⁸	40.108 ¹⁰³	49.47 ⁴³	64.715 ³⁰⁴	69.98 ⁷⁵
Mean Place	14.428	71.59	37.589	30.78	62.133	67.34
Sec δ , Tan δ	1.383	-0.955	1.035	+0.268	1.866	-1.576
L α , L δ	-0.01	+0.4	0.00	+0.4	-0.02	+0.4
ω α , ω δ	+0.06	+0.4	-0.02	+0.4	+0.10	+0.4
Authority and Catalogue No.	A. N.	85	A. E.	88	A. E.	96

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	♈ Piscium.		♏ Piscium.		♐ Ceti.	
	4.68	K o	4.50	K o	3.92	K o
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 01 ^m 37	[°] 5 ['] 07	^h 01 ^m 41	[°] 8 ['] 47	^h 01 ^m 47	[°] 10 ['] 41
Jan. 0.8	40.225 ^s	21.34 ^s 61	34.647 ^s	42.48 ^s	53.799 ^s	34.29 ^s 76
10.8	40.116 ¹⁰⁹	20.73 ¹²⁰	34.540 ¹⁰⁷	41.93 ⁵⁵	53.687 ¹¹²	35.05 ⁵⁸
20.7	39.996 ¹²⁵	20.14 ⁵⁹	34.418 ¹²²	41.35 ⁵⁸	53.562 ¹²⁵	35.63 ³⁷
30.7	39.871 ¹²⁶	19.58 ⁵⁶	34.290 ¹²⁸	40.76 ⁵⁹	53.431 ¹³¹	36.00 ¹⁵
Feb. 9.7	39.745 ¹²⁰	19.08 ⁵⁰	34.161 ¹²⁹	40.19 ⁵⁷	53.298 ¹³³	36.15 ⁹
19.7	39.625 ¹⁰⁵	18.66 ⁴²	34.039 ¹²²	39.67 ⁵²	53.171 ¹²⁷	36.06 ³⁴
29.6	39.520 ⁸³	18.36 ³⁰	33.930 ¹⁰⁹	39.23 ⁴⁴	53.057 ¹¹⁴	35.72 ⁵⁸
Mar. 10.6	39.437 ⁵⁵	18.19 ²⁰	33.842 ⁸⁸	38.91 ³²	52.963 ⁹⁴	35.14 ⁸³
20.6	39.382 ²⁰	18.19 ²⁰	33.784 ⁵⁸	38.72 ¹⁹	52.896 ⁶⁷	34.31 ¹⁰⁹
30.5	39.362 ²⁰	18.39 ⁴²	33.760 ²⁴	38.71 ¹	52.863 ³³	33.22 ¹³⁴
Apr. 9.5	39.382 ⁶⁴	18.81 ⁴²	33.777 ¹⁷	38.90 ¹⁹	52.869 ⁶	31.88 ¹⁵⁷
19.5	39.446 ¹⁰⁸	19.46 ⁶⁵	33.838 ⁶¹	39.32 ⁴²	52.917 ⁴⁸	28.52 ¹⁹⁸
29.5	39.554 ¹⁵²	20.35 ⁸⁹	33.943 ¹⁰⁵	39.99 ⁶⁷	53.010 ⁹³	26.54 ²¹²
May 9.4	39.706 ¹⁹³	21.48 ¹¹³	34.093 ¹⁵⁰	40.90 ⁹¹	53.146 ¹³⁶	22.18 ²³¹
19.4	39.899 ²³¹	22.83 ¹³⁵	34.286 ¹⁹³	42.05 ¹¹⁵	53.325 ¹⁷⁹	19.87 ²³¹
29.4	40.130 ²⁶²	24.38 ¹⁵⁵	34.516 ²³⁰	43.43 ¹³⁸	53.543 ²¹⁸	17.56 ²²⁶
June 8.4	40.392 ²⁸⁸	26.10 ¹⁷²	34.778 ²⁶²	44.99 ¹⁵⁶	53.795 ²⁵²	15.30 ²¹⁵
18.3	40.680 ³⁰⁵	27.97 ¹⁸⁷	35.067 ²⁸⁹	46.71 ¹⁷²	54.074 ²⁷⁹	11.16 ¹⁹⁹
28.3	40.985 ³¹⁴	29.90 ¹⁹³	35.373 ³⁰⁶	48.55 ¹⁸⁴	54.374 ³⁰⁰	09.38 ¹⁷⁸
July 8.3	41.299 ³¹⁷	31.87 ¹⁹⁷	35.690 ³¹⁷	50.46 ¹⁹¹	54.686 ³¹²	07.87 ¹⁵¹
18.2	41.616 ³¹¹	33.83 ¹⁹⁶	36.009 ³¹⁹	52.39 ¹⁹³	55.002 ³¹⁶	06.65 ⁸⁹
28.2	41.927 ²⁹⁸	35.72 ¹⁸⁹	36.323 ³¹⁴	54.29 ¹⁹⁰	55.316 ³¹⁴	05.21 ⁵⁵
Aug. 7.2	42.225 ²⁷⁹	37.49 ¹⁷⁷	36.624 ³⁰¹	56.12 ¹⁸³	55.620 ³⁰⁴	05.00 ²¹
17.2	42.504 ²⁵⁶	39.10 ¹⁶¹	36.907 ²⁸³	57.82 ¹⁷⁰	55.906 ²⁸⁶	05.10 ¹⁰
27.1	42.760 ²²⁸	40.53 ¹⁴³	37.167 ²⁶⁰	59.36 ¹⁵⁴	56.170 ²⁶⁴	05.51 ⁴¹
Sept. 6.1	42.988 ¹⁹⁸	41.74 ¹²¹	37.400 ²³³	60.72 ¹³⁶	56.408 ²³⁸	06.19 ⁶⁸
16.1	43.186 ¹⁶⁶	42.72 ⁹⁸	37.602 ²⁰²	61.87 ¹¹⁵	56.615 ²⁰⁷	07.09 ⁹⁰
26.1	43.352 ¹³³	43.45 ⁷³	37.773 ¹⁷¹	62.80 ⁹³	56.790 ¹⁷⁵	08.14 ¹⁰⁵
Oct. 6.0	43.485 ¹⁰²	43.95 ⁵⁰	37.912 ¹³⁹	63.50 ⁷⁰	56.932 ¹⁴²	09.29 ¹¹⁵
16.0	43.587 ⁷²	44.22 ²⁷	38.019 ¹⁰⁷	63.99 ⁴⁹	57.041 ¹⁰⁹	10.49 ¹²⁰
26.0	43.659 ⁴²	44.29 ⁷	38.095 ⁷⁶	64.28 ²⁹	57.117 ⁷⁶	11.67 ¹¹⁸
Nov. 4.9	43.701 ¹⁴	44.19 ¹⁰	38.142 ⁴⁷	64.39 ¹¹	57.162 ⁴⁵	12.79 ¹¹²
14.9	43.715 ¹²	43.93 ²⁶	38.161 ¹⁹	64.35 ⁴	57.178 ¹⁶	13.80 ¹⁰¹
24.9	43.703 ³⁶	43.55 ³⁸	38.154 ⁷	64.16 ¹⁹	57.166 ¹²	14.66 ⁸⁶
Dec. 4.9	43.667 ⁵⁹	43.08 ⁴⁷	38.121 ³³	63.86 ³⁰	57.129 ³⁷	
14.8	43.608 ⁷⁹	42.55 ⁵³	38.065 ⁵⁶	63.47 ³⁹	57.068 ⁶¹	
24.8	43.529 ⁹⁵	41.97 ⁵⁸	37.988 ⁷⁷	63.00 ⁴⁷	56.986 ⁸²	
34.8	43.434 ⁹⁵	41.38 ⁵⁹	37.892 ⁹⁶	62.48 ⁵²	56.886 ¹⁰⁰	
Mean Place	40.878	26.21	35.294	46.04	54.310	24.27
Sec δ, Tan δ	1.004	+0.090	1.012	+0.155	1.018	-0.189
L α, L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω α, ω δ	-0.01	+0.4	-0.01	+0.4	+0.01	+0.5
Authority and Catalogue No	A. N.	99	A. E.	104	A. E.	109

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Cassiopeiae.		β Arietis.		α Hydri.	
	3.44	B 3	2.72	A 5	3.02	F 0
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	ⁿ 01 49	^c 63 18	^h 01 50	^o 20 27	^h 01 56	^o 61 54
Jan. 0.8	10.99 ^s	70.62 ^s	38.819 ^s	24.90 ^s	30.68 ^s	93.08 ^s
10.8	10.64 ³⁵	71.34 ⁷²	38.704 ¹¹⁵	24.57 ³³	30.31 ³⁷	93.71 ⁶³
20.7	10.26 ³⁸	71.52 ¹⁸	38.572 ¹³²	24.08 ⁴⁹	29.92 ³⁹	93.76 ⁵
30.7	09.86 ⁴⁰	71.16 ³⁶	38.431 ¹⁴¹	23.46 ⁶²	29.53 ³⁹	93.23 ⁵³
Feb. 9.7	09.47 ³⁹	70.29 ⁸⁷	38.288 ¹⁴³	22.74 ⁷²	29.15 ³⁸	92.13 ¹¹⁰
19.7	09.10 ³⁷	68.95 ¹³⁴	38.150 ¹³⁸	21.94 ⁸⁰	28.79 ³⁶	90.49 ¹⁶⁴
29.6	08.76 ³⁴	67.19 ¹⁷⁶	38.025 ¹²⁵	21.10 ⁸⁴	28.46 ³³	88.37 ²¹²
Mar. 10.6	08.48 ²⁸	65.09 ²¹⁰	37.923 ¹⁰²	20.28 ⁸²	28.17 ²⁹	85.81 ²⁵⁶
20.6	08.28 ²⁰	62.76 ²³³	37.851 ⁷²	19.51 ⁷⁷	27.94 ²³	82.88 ²⁹³
30.6	08.15 ¹³	60.29 ²⁴⁷	37.816 ³⁵	18.86 ⁶⁵	27.78 ¹⁶	79.63 ³²⁵
Apr. 9.5	08.12 ³	57.79 ²⁵⁰	37.823 ⁷	18.37 ⁴⁹	27.68 ¹⁰	76.14 ³⁴⁹
19.5	08.18 ⁶	55.36 ²⁴³	37.877 ⁵⁴	18.08 ²⁹	27.66 ²	72.49 ³⁶⁵
29.5	08.34 ¹⁶	53.10 ²²⁶	37.980 ¹⁰³	18.02 ⁶	27.72 ⁶	68.76 ³⁷³
May 9.4	08.58 ²⁴	51.10 ²⁰⁰	38.129 ¹⁴⁹	18.23 ²¹	27.86 ¹⁴	65.02 ³⁷⁴
19.4	08.92 ³⁴	49.43 ¹⁶⁷	38.324 ¹⁹⁵	18.71 ⁴⁸	28.08 ²²	61.35 ³⁶⁷
29.4	09.33 ⁴¹	48.16 ¹²⁷	38.560 ²³⁶	19.46 ⁷⁵	28.37 ²⁹	57.84 ³⁵¹
June 8.4	09.81 ⁴⁸	47.31 ⁸⁵	38.830 ²⁷⁰	20.48 ¹⁰²	28.73 ³⁶	54.56 ³²⁸
18.3	10.34 ⁵³	46.93 ³⁸	39.128 ²⁹⁸	21.73 ¹²⁵	29.16 ⁴³	51.60 ²⁹⁶
28.3	10.90 ⁵⁶	47.02 ⁹	39.445 ³¹⁷	23.20 ¹⁴⁷	29.63 ⁴⁷	49.02 ²⁵⁸
July 8.3	11.48 ⁵⁸	47.58 ⁵⁶	39.774 ³²⁹	24.85 ¹⁶⁵	30.13 ⁵⁰	46.89 ²¹³
18.3	12.07 ⁵⁹	48.60 ¹⁰²	40.106 ³³²	26.63 ¹⁷⁸	30.66 ⁵³	45.27 ¹⁶²
28.2	12.66 ⁵⁹	50.06 ¹⁴⁶	40.434 ³²⁸	28.49 ¹⁸⁶	31.20 ⁵⁴	44.19 ¹⁰⁸
Aug. 7.2	13.22 ⁵⁶	51.91 ¹⁸⁵	40.751 ³¹⁷	30.40 ¹⁹¹	31.73 ⁵³	43.70 ⁴⁹
17.2	13.75 ⁵³	54.13 ²²²	41.049 ²⁹⁸	32.29 ¹⁸⁹	32.24 ⁵¹	43.80 ¹⁰
27.1	14.25 ⁵⁰	56.65 ²⁵²	41.325 ²⁷⁶	34.14 ¹⁸⁵	32.72 ⁴⁸	44.48 ⁶⁸
Sept. 6.1	14.69 ⁴⁴	59.43 ²⁷⁸	41.574 ²⁴⁹	35.91 ¹⁷⁷	33.15 ⁴³	45.73 ¹²⁵
16.1	15.08 ³⁹	62.42 ²⁹⁹	41.793 ²¹⁹	37.55 ¹⁶⁴	33.52 ³⁷	47.48 ¹⁷⁵
26.1	15.41 ³³	65.56 ³¹⁴	41.980 ¹⁸⁷	39.05 ¹⁵⁰	33.82 ³⁰	49.69 ²²¹
Oct. 6.0	15.67 ²⁶	68.78 ³²²	42.135 ¹⁵⁵	40.39 ¹³⁴	34.05 ²³	52.27 ²⁵⁸
16.0	15.87 ²⁰	72.03 ³²⁵	42.257 ¹²²	41.56 ¹¹⁷	34.20 ¹⁵	55.09 ²⁸²
26.0	16.00 ¹³	75.23 ³²⁰	42.348 ⁹¹	42.55 ⁹⁹	34.27 ⁷	58.08 ²⁹⁹
Nov. 5.0	16.06 ⁶	78.33 ³¹⁰	42.408 ⁶⁰	43.36 ⁸¹	34.27 [—]	61.11 ³⁰³
14.9	16.05 ¹	81.25 ²⁹²	42.438 ³⁰	44.00 ⁶⁴	34.18 ⁹	64.04 ²⁹³
24.9	15.97 ⁸	83.92 ²⁶⁷	42.438 [—]	44.46 ⁴⁶	34.01 ¹⁷	66.77 ²⁷³
Dec. 4.9	15.82 ¹⁵	86.28 ²³⁶	42.411 ²⁷	44.74 ²⁸	33.78 ²³	69.18 ²⁴¹
14.8	15.61 ²¹	88.26 ¹⁹⁸	42.357 ⁵⁴	44.84 ¹⁰	33.51 ²⁷	71.18 ²⁰⁰
24.8	15.34 ²⁷	89.80 ¹⁵⁴	42.278 ⁷⁹	44.78 ⁶	33.19 ³²	72.69 ¹⁵¹
34.8	15.02 ³²	90.85 ¹⁰⁵	42.177 ¹⁰¹	44.56 ²²	32.83 ³⁶	73.67 ⁹⁸
Mean Place	11.584	59.05	39.456	24.47	30.103	70.63
Sec δ , Tan δ	2.227	+1.990	1.067	+0.373	2.124	-1.874
L α , L δ	+0.02	+0.4	0.00	+0.4	-0.02	+0.3
ω α , ω δ	-0.12	+0.5	-0.02	+0.5	+0.11	+0.5
Authority and Catalogue No.	A. E.	III	A. E.	II4	A. E.	II9

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ν Ceti.		γ^1 Andromedæ.		α Arietis.	
	4.18	Ma	2.28	Ko	2.23	K2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 01 ^m 56	[°] 21 ['] 25	^h 01 ^m 59	[°] 41 ['] 58	^h 02 ^m 03	[°] 23 ['] 07
Jan. 0.8	36.350 ^s	46.73	27.617 ^s	73.23	05.961 ^s	23.42
10.8	36.224 ¹²⁶	47.60 ⁸⁷	27.451 ¹⁶⁶	73.47 ²⁴	05.845 ¹¹⁶	23.20 ²²
20.8	36.085 ¹³⁹	48.17 ⁵⁷	27.263 ¹⁸⁸	73.34 ¹³	05.712 ¹³³	22.80 ⁴⁰
30.7	35.939 ¹⁴⁶	48.42 ²⁵	27.062 ²⁰¹	72.86 ⁴⁸	05.566 ¹⁴⁶	22.25 ⁵⁵
Feb. 9.7	35.790 ¹⁴⁹	48.34 ⁸	26.856 ²⁰⁶	72.05 ⁸¹	05.415 ¹⁵¹	21.56 ⁶⁹
19.7	35.647 ¹⁴³	47.94 ⁴⁰	26.657 ¹⁹⁹	70.94 ¹¹¹	05.268 ¹⁴⁷	20.76 ⁸⁰
29.6	35.516 ¹³¹	47.21 ⁷³	26.475 ¹⁸²	69.59 ¹³⁵	05.132 ¹³⁶	19.90 ⁸⁶
Mar. 10.6	35.406 ¹¹⁰	46.16 ¹⁰⁵	26.322 ¹⁵³	68.06 ¹⁵³	05.017 ¹¹⁵	19.02 ⁸⁸
20.6	35.323 ⁸³	44.80 ¹³⁶	26.208 ¹¹⁴	66.41 ¹⁶⁵	04.932 ⁸⁵	18.16 ⁸⁶
30.6	35.274 ⁴⁹	43.16 ¹⁶⁴	26.142 ⁶⁶	64.74 ¹⁶⁷	04.884 ⁴⁸	17.39 ⁷⁷
Apr. 9.5	35.264 ¹⁰	41.25 ¹⁹¹	26.131 ¹¹	63.12 ¹⁶²	04.879 ⁵	16.75 ⁶⁴
19.5	35.298 ³⁴	39.11 ²¹⁴	26.178 ⁴⁷	61.62 ¹⁵⁰	04.921 ⁴²	16.30 ⁴⁵
29.5	35.378 ⁸⁰	36.76 ²³⁵	26.284 ¹⁰⁶	60.33 ¹²⁹	05.012 ⁹¹	16.06 ²⁴
May 9.5	35.504 ¹²⁶	34.26 ²⁵⁰	26.451 ¹⁶⁷	59.29 ¹⁰⁴	05.152 ¹⁴⁰	16.08 ²
19.4	35.675 ¹⁷¹	31.65 ²⁶¹	26.673 ²²²	58.55 ⁷⁴	05.339 ¹⁸⁷	16.36 ²⁸
29.4	35.887 ²¹²	28.99 ²⁶⁶	26.946 ²⁷³	58.16 ³⁹	05.569 ²³⁰	16.92 ⁵⁶
June 8.4	36.136 ²⁴⁹	26.33 ²⁶⁶	27.261 ³¹⁵	58.13 ³	05.835 ²⁶⁶	17.75 ⁸³
18.3	36.415 ²⁷⁹	23.74 ²⁵⁹	27.611 ³⁵⁰	58.46 ³³	06.131 ²⁹⁶	18.83 ¹⁰⁸
28.3	36.718 ³⁰³	21.28 ²⁴⁶	27.987 ³⁷⁶	59.16 ⁷⁰	06.449 ³¹⁸	20.15 ¹³²
July 8.3	37.036 ³¹⁸	19.02 ²²⁶	28.377 ³⁹⁰	60.20 ¹⁰⁴	06.780 ³³¹	21.66 ¹⁵¹
18.3	37.361 ³²⁵	17.00 ²⁰²	28.773 ³⁹⁶	61.56 ¹³⁶	07.117 ³³⁷	23.32 ¹⁶⁶
28.2	37.686 ³²⁵	15.30 ¹⁷⁰	29.165 ³⁹²	63.19 ¹⁶³	07.451 ³³⁴	25.10 ¹⁷⁸
Aug. 7.2	38.002 ³¹⁶	13.95 ¹³⁵	29.546 ³⁸¹	65.07 ¹⁸⁸	07.776 ³²⁵	26.95 ¹⁸⁵
17.2	38.303 ³⁰¹	12.99 ⁹⁶	29.907 ³⁶¹	67.15 ²⁰⁸	08.085 ³⁰⁹	28.82 ¹⁸⁷
27.2	38.582 ²⁷⁹	12.43 ⁵⁶	30.243 ³³⁶	69.37 ²²²	08.373 ²⁸⁸	30.68 ¹⁸⁶
Sept. 6.1	38.834 ²⁵²	12.29 ¹⁴	30.548 ³⁰⁵	71.71 ²³⁴	08.634 ²⁶¹	32.47 ¹⁷⁹
16.1	39.056 ²²²	12.55 ²⁶	30.819 ²⁷¹	74.10 ²³⁹	08.868 ²³⁴	34.17 ¹⁷⁰
26.1	39.244 ¹⁸⁸	13.20 ⁶⁵	31.054 ²³⁵	76.51 ²⁴¹	09.070 ²⁰²	35.76 ¹⁵⁹
Oct. 6.0	39.396 ¹⁵²	14.18 ⁹⁸	31.249 ¹⁹⁵	78.90 ²³⁹	09.240 ¹⁷⁰	37.21 ¹⁴⁵
16.0	39.513 ¹¹⁷	15.46 ¹²⁸	31.405 ¹⁵⁶	81.21 ²³¹	09.379 ¹³⁹	38.50 ¹²⁹
26.0	39.595 ⁸²	16.95 ¹⁴⁹	31.522 ¹¹⁷	83.42 ²²¹	09.485 ¹⁰⁶	39.63 ¹¹³
Nov. 5.0	39.643 ⁴⁸	18.59 ¹⁶⁴	31.598 ⁷⁶	85.49 ²⁰⁷	09.560 ⁷⁵	40.59 ⁹⁶
14.9	39.659 ¹⁶	20.31 ¹⁷²	31.635 ³⁷	87.39 ¹⁹⁰	09.604 ⁴⁴	41.38 ⁷⁹
24.9	39.644 ¹⁵	22.02 ¹⁷¹	31.632 ³	89.06 ¹⁶⁷	09.617 ¹³	42.00 ⁶²
Dec. 4.9	39.600 ⁴⁴	23.64 ¹⁶²	31.591 ⁴¹	90.48 ¹⁴²	09.601 ¹⁶	42.43 ⁴³
14.9	39.530 ⁷⁰	25.12 ¹⁴⁸	31.512 ⁷⁹	91.60 ¹¹²	09.554 ⁴⁷	42.69 ²⁶
24.8	39.437 ⁹³	26.40 ¹²⁸	31.398 ¹¹⁴	92.42 ⁸²	09.480 ⁷⁴	42.77 ⁸
34.8	39.324 ¹¹³	27.43 ¹⁰³	31.252 ¹⁴⁶	92.89 ⁴⁷	09.382 ⁹⁸	42.66 ¹¹
Mean Place	36.720	33.57	28.227	66.40	06.536	22.05
Sec δ , Tan δ	1.074	-0.392	1.345	+0.900	1.087	+0.427
L α , L δ	-0.01	+0.3	+0.01	+0.3	+0.01	+0.3
ω α , ω δ	+0.02	+0.5	-0.05	+0.5	-0.02	+0.5
Authority and Catalogue No.	A. E.	120	A. E.	124	A. E.	125

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Trianguli.		ξ^1 Ceti.		67 Ceti.	
	3·c8	A 5	4·54	G 5	5·70	G 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 02 05	[°] ['] 34 38	^h ^m 02 09	[°] ['] 8 30	^h ^m 02 13	[°] ['] 6 44
	^s	["]	^s	["]	^s	["]
Jan. 0·8	14·494 ¹³⁸	56·18 ⁸	10·311 ¹⁰²	32·36 ⁵³	23·036 ¹⁰⁴	79·34 ⁸¹
10·8	14·356 ¹⁵⁹	56·26 ²⁰	10·209 ¹¹⁹	31·83 ⁵⁴	22·932 ¹²⁰	80·15 ⁶⁵
20·8	14·197 ¹⁷³	56·06 ⁴⁸	10·090 ¹³²	31·29 ⁵⁴	22·812 ¹³²	80·80 ⁴⁷
30·7	14·024 ¹⁷⁹	55·58 ⁷⁴	09·958 ¹³⁶	30·75 ⁵⁰	22·680 ¹³⁸	81·27 ²⁹
Feb. 9·7	13·845 ¹⁷⁴	54·84 ⁹⁷	09·822 ¹³⁶	30·25 ⁴⁷	22·542 ¹³⁷	81·56 ⁸
19·7	13·671 ¹⁶¹	53·87 ¹¹⁵	09·686 ¹²⁶	29·78 ³⁸	22·405 ¹²⁹	81·64 ¹³
29·6	13·510 ¹³⁷	52·72 ¹²⁸	09·560 ¹⁰⁸	29·40 ²⁹	22·276 ¹¹¹	81·51 ³⁶
Mar. 10·6	13·373 ¹⁰³	51·44 ¹³³	09·452 ⁸²	29·11 ¹⁵	22·165 ⁸⁷	81·15 ⁵⁹
20·6	13·270 ⁶¹	50·11 ¹³³	09·370 ⁵⁰	28·96 ²	22·078 ⁵⁵	80·56 ⁸³
30·6	13·209 ¹³	48·78 ¹²⁵	09·320 ¹⁰	28·98 ²⁰	22·023 ¹⁸	79·73 ¹⁰⁷
Apr. 9·5	13·196 ⁴¹	47·53 ¹¹⁰	09·310 ³³	29·18 ⁴²	22·005 ²⁴	78·66 ¹³⁰
19·5	13·237 ⁹⁵	46·43 ⁹¹	09·343 ⁸⁰	29·60 ⁶⁴	22·029 ⁶⁸	77·36 ¹⁵³
29·5	13·332 ¹⁵⁰	45·52 ⁶⁵	09·423 ¹²⁴	30·24 ⁸⁷	22·097 ¹¹³	75·83 ¹⁷³
May 9·5	13·482 ²⁰¹	44·87 ³⁷	09·547 ¹⁶⁸	31·11 ¹¹⁰	22·210 ¹⁵⁷	74·10 ¹⁹¹
19·4	13·683 ²⁴⁸	44·50 ⁵	09·715 ²⁰⁹	32·21 ¹³¹	22·367 ¹⁹⁸	72·19 ²⁰⁵
29·4	13·931 ²⁸⁹	44·45 ²⁷	09·924 ²⁴⁴	33·52 ¹⁴⁹	22·565 ²³³	70·14 ²¹⁶
June 8·4	14·220 ³²¹	44·72 ⁵⁹	10·168 ²⁷⁴	35·01 ¹⁶⁵	22·798 ²⁶⁴	67·98 ²¹⁹
18·3	14·541 ³⁴⁶	45·31 ⁹⁰	10·442 ²⁹⁵	36·66 ¹⁷⁶	23·062 ²⁸⁷	65·79 ²¹⁹
28·3	14·887 ³⁶⁰	46·21 ¹¹⁹	10·737 ³¹⁰	38·42 ¹⁸³	23·349 ³⁰³	63·60 ²¹²
July 8·3	15·247 ³⁶⁷	47·40 ¹⁴⁵	11·047 ³¹⁶	40·25 ¹⁸⁶	23·652 ³¹²	61·48 ²⁰¹
18·3	15·614 ³⁶⁴	48·85 ¹⁶⁶	11·363 ³¹⁵	42·11 ¹⁸³	23·964 ³¹²	59·47 ¹⁸³
28·2	15·978 ³⁵⁴	50·51 ¹⁸⁵	11·678 ³⁰⁸	43·94 ¹⁷⁵	24·276 ³⁰⁶	57·64 ¹⁶¹
Aug. 7·2	16·332 ³³⁷	52·36 ¹⁹⁸	11·986 ²⁹⁴	45·69 ¹⁶³	24·582 ²⁹³	56·03 ¹³⁵
17·2	16·669 ³¹⁴	54·34 ²⁰⁷	12·280 ²⁷⁴	47·32 ¹⁴⁸	24·875 ²⁷⁵	54·68 ¹⁰⁶
27·2	16·983 ²⁸⁷	56·41 ²¹¹	12·554 ²⁵¹	48·80 ¹²⁹	25·150 ²⁵¹	53·62 ⁷⁴
Sept. 6·1	17·270 ²⁵⁷	58·52 ²¹²	12·805 ²²⁴	50·09 ¹⁰⁸	25·401 ²²⁵	52·88 ⁴²
16·1	17·527 ²²³	60·64 ²⁰⁹	13·029 ¹⁹⁶	51·17 ⁸⁸	25·626 ¹⁹⁶	52·46 ¹⁰
26·1	17·750 ¹⁸⁸	62·73 ²⁰²	13·225 ¹⁶⁶	52·05 ⁶⁴	25·872 ¹⁶⁶	52·36 ²⁰
Oct. 6·0	17·938 ¹⁵³	64·75 ¹⁹²	13·391 ¹³⁵	52·69 ⁴³	25·988 ¹³⁴	52·56 ⁴⁷
16·0	18·091 ¹¹⁸	66·67 ¹⁸⁰	13·526 ¹⁰⁵	53·12 ²³	26·122 ¹⁰³	53·03 ⁶⁹
26·0	18·209 ⁸²	68·47 ¹⁶⁵	13·631 ⁷⁵	53·35 ⁶	26·225 ⁷³	53·72 ⁸⁸
Nov. 5·0	18·291 ⁴⁶	70·12 ¹⁴⁸	13·706 ⁴⁶	53·41 ¹⁰	26·298 ⁴³	54·60 ¹⁰⁰
14·9	18·337 ¹²	71·60 ¹²⁸	13·752 ¹⁸	53·31 ²²	26·341 ¹³	55·60 ¹⁰⁸
24·9	18·349 ²⁴	72·88 ¹⁰⁶	13·770 ¹⁰	53·09 ³³	26·354 ¹⁴	56·68 ¹⁰⁹
Dec. 4·9	18·325 ⁵⁸	73·94 ⁸¹	13·760 ³⁸	52·76 ⁴⁰	26·340 ⁴¹	57·77 ¹⁰⁶
14·9	18·267 ⁸⁹	74·75 ⁵⁶	13·722 ⁶³	52·36 ⁴⁷	26·299 ⁶⁶	58·83 ⁹⁹
24·8	18·178 ¹¹⁸	75·31 ²⁷	13·659 ⁸⁶	51·89 ⁵⁰	26·233 ⁸⁷	59·82 ⁸⁸
34·8	18·060	75·58	13·573	51·39	26·146	60·70
Mean Place	15·073	51·36	10·806	35·59	23·426	71·24
Sec δ , Tan δ	1·216	+0·691	1·011	+0 150	1·007	-0·118
L a , L δ	+0·01	+0·3	0·00	+0·3	0·00	+0 3
ω a , ω δ	-0·04	+0·5	-0·01	+0·5	+0·01	+0·5
Authority and Catalogue No.	A. E.	126		130	A. E.	133

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ϕ Eridani.		θ Arietis.		\circ Ceti.	
	3.78	B 8	5.69	A o	Var.	M d
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 02 ^m 13	[°] 51 ['] 50	^h 02 ^m 14	[°] 19 ['] 34	^h 02 ^m 15	[°] 3 ['] 17
Jan. 0.8	56.573	61.27	06.416	08.68	41.995	80.10
10.8	56.320 ²⁵³	62.24 ⁹⁷	06.309 ¹⁰⁷	08.41 ²⁷	41.894 ¹⁰¹	80.87 ⁷⁷
20.8	56.049 ²⁷¹	62.68 ⁴⁴	06.182 ¹²⁷	08.02 ³⁹	41.775 ¹¹⁹	81.51 ⁶⁴
30.7	55.768 ²⁸¹	62.58 ¹⁰	06.041 ¹⁴¹	07.52 ⁵⁰	41.645 ¹³⁰	82.01 ⁵⁰
Feb. 9.7	55.486 ²⁸²	61.94 ⁶⁴	05.893 ¹⁴⁸	06.91 ⁶¹	41.507 ¹³⁸	82.35 ³⁴
19.7	55.213 ²⁷³	60.79 ¹¹⁵	05.746 ¹⁴⁷	06.24 ⁶⁷	41.371 ¹³⁶	82.54 ¹⁹
29.7	54.959 ²⁵⁴	59.14 ¹⁶⁵	05.608 ¹³⁸	05.53 ⁷¹	41.241 ¹³⁰	82.52 ²
Mar. 10.6	54.735 ²²⁴	57.04 ²¹⁰	05.489 ¹¹⁹	04.82 ⁷¹	41.129 ¹¹²	82.33 ¹⁹
20.6	54.549 ¹⁸⁶	54.54 ²⁵⁰	05.397 ⁹²	04.16 ⁶⁶	41.042 ⁸⁷	81.91 ⁴²
30.6	54.409 ¹⁴⁰	51.70 ²⁸⁴	05.340 ⁵⁷	03.60 ⁵⁶	40.985 ⁵⁷	81.27 ⁶⁴
Apr. 9.5	54.323 ⁸⁶	48.56 ³¹⁴	05.325 ¹⁵	03.17 ⁴³	40.968 ¹⁷	80.40 ⁸⁷
19.5	54.296 ²⁷	45.21 ³³⁵	05.356 ³¹	02.92 ²⁵	40.989 ²¹	79.30 ¹¹⁰
29.5	54.333 ³⁷	41.71 ³⁵⁰	05.434 ⁷⁸	02.89 ³	41.058 ⁶⁹	77.97 ¹³³
May 9.5	54.434 ¹⁰¹	38.13 ³⁵⁸	05.560 ¹²⁶	03.09 ²⁰	41.169 ¹¹¹	76.44 ¹⁵³
19.4	54.599 ¹⁶⁵	34.57 ³⁵⁶	05.734 ¹⁷⁴	03.54 ⁴⁵	41.325 ¹⁵⁶	74.73 ¹⁷¹
29.4	54.824 ²²⁵	31.06 ³⁵¹	05.950 ²¹⁶	04.25 ⁷¹	41.523 ¹⁹⁸	72.84 ¹⁸⁹
June 8.4	55.105 ²⁸¹	27.74 ³³²	06.202 ²⁵²	05.21 ⁹⁶	41.756 ²³³	70.84 ²⁰⁰
18.4	55.434 ³²⁹	24.64 ³¹⁰	06.486 ²⁸⁴	06.39 ¹¹⁸	42.019 ²⁶³	68.77 ²⁰⁷
28.3	55.804 ³⁷⁰	21.86 ²⁷⁸	06.792 ³⁰⁶	07.76 ¹³⁷	42.305 ²⁸⁶	66.69 ²⁰⁸
July 8.3	56.205 ⁴⁰¹	19.47 ²³⁹	07.114 ³²²	09.30 ¹⁵⁴	42.607 ³⁰²	64.64 ²⁰⁵
18.3	56.625 ⁴²⁰	17.53 ¹⁹⁴	07.443 ³²⁹	10.97 ¹⁶⁷	42.918 ³¹¹	62.66 ¹⁹⁸
28.2	57.055 ⁴³⁰	16.09 ¹⁴⁴	07.771 ³²⁸	12.72 ¹⁷⁵	43.230 ³¹²	60.84 ¹⁸²
Aug. 7.2	57.482 ⁴²⁷	15.20 ⁸⁹	08.092 ³²¹	14.50 ¹⁷⁸	43.536 ³⁰⁶	59.18 ¹⁶⁶
17.2	57.896 ⁴¹⁴	14.86 ³⁴	08.399 ³⁰⁷	16.27 ¹⁷⁷	43.828 ²⁹²	57.77 ¹⁴¹
27.2	58.286 ³⁹⁰	15.11 ²⁵	08.687 ²⁸⁸	17.99 ¹⁷²	44.103 ²⁷⁵	56.61 ¹¹⁶
Sept. 6.1	58.643 ³⁵⁷	15.91 ⁸⁰	08.951 ²⁶⁴	19.63 ¹⁶⁴	44.354 ²⁵¹	55.75 ⁸⁶
16.1	58.959 ³¹⁶	17.25 ¹³⁴	09.188 ²³⁷	21.15 ¹⁵²	44.581 ²²⁷	55.18 ⁵⁷
26.1	59.227 ²⁶⁸	19.04 ¹⁷⁹	09.397 ²⁰⁹	22.54 ¹³⁹	44.777 ¹⁹⁶	54.92 ²⁶
Oct. 6.1	59.440 ²¹³	21.27 ²²³	09.575 ¹⁷⁸	23.77 ¹²³	44.946 ¹⁶⁹	54.94 ²
16.0	59.597 ¹⁵⁷	23.81 ²⁵⁴	09.722 ¹⁴⁷	24.84 ¹⁰⁷	45.083 ¹³⁷	55.21 ²⁷
26.0	59.696 ⁹⁹	26.56 ²⁷⁵	09.839 ¹¹⁷	25.74 ⁹⁰	45.191 ¹⁰⁸	55.71 ⁵⁰
Nov. 5.0	59.736 ⁴⁰	29.42 ²⁸⁶	09.924 ⁸⁵	26.47 ⁷³	45.268 ⁷⁷	56.39 ⁶⁸
14.9	59.719 ¹⁷	32.27 ²⁸⁵	09.979 ⁵⁵	27.04 ⁵⁷	45.314 ⁴⁶	57.20 ⁸¹
24.9	59.647 ⁷²	34.99 ²⁷²	10.003 ²⁴	27.46 ⁴²	45.331 ¹⁷	58.11 ⁹¹
Dec. 4.9	59.527 ¹²⁰	37.48 ²⁴⁹	09.997 ⁶	27.72 ²⁶	45.322 ⁹	59.05 ⁹⁴
14.9	59.361 ¹⁶⁶	39.64 ²¹⁶	09.961 ³⁶	27.83 ¹¹	45.284 ³⁸	59.98 ⁹³
24.8	59.157 ²⁰⁴	41.39 ¹⁷⁵	09.898 ⁶³	27.80 ³	45.220 ⁶⁴	60.87 ⁸⁹
34.8	58.922 ²³⁵	42.67 ¹²⁸	09.809 ⁸⁹	27.63 ¹⁷	45.136 ⁸⁴	61.69 ⁸²
Mean Place	56.231	41.31	06.924	08.32	42.395	73.17
Sec δ , Tan δ	1.619	-1.273	1.061	+0.355	1.002	-0.058
L a , L δ	-0.02	+0.3	+0.01	+0.3	0.00	+0.3
ω a , ω δ	+0.07	+0.5	-0.02	+0.5	0.00	+0.6
Authority and Catalogue No.	A. N.	134	A. N.	135	A. E.	136

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	κ Fornacis.		δ Hydri.		ξ^2 Ceti.	
	5.37	F 5	4.26	A 2	4.34	A 0
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
Mean Solar Date.	^h ^m 02 19	^o ['] 24 08	^h ^m 02 20	^c ['] 68 58	^h ^m 02 24	^o ['] 8 08
Jan. 0.8	14.626 ^s	47.28 ["]	29.29 ^s	94.30 ["]	19.216 ^s	14.64 ["]
10.8	14.500 ¹²⁶	48.31 ¹⁰³	28.77 ⁵²	95.15 ⁸⁵	19.120 ⁹⁶	14.12 ⁵²
20.8	14.356 ¹⁴⁴	49.02 ⁷¹	28.22 ⁵⁵	95.40 ²⁵	19.004 ¹¹⁶	13.60 ⁵²
30.7	14.200 ¹⁵⁶	49.38 ³⁶	27.66 ⁵⁶	95.05 ³⁵	18.873 ¹³¹	13.09 ⁵¹
Feb. 9.7	14.038 ¹⁶²	49.38 ³⁶	27.10 ⁵⁶	94.11 ⁹⁴	18.734 ¹³⁹	12.61 ⁴⁸
19.7	13.878 ¹⁶⁰	49.02 ⁷¹	26.55 ⁵⁵	92.62 ¹⁴⁹	18.593 ¹⁴¹	12.19 ⁴²
29.7	13.727 ¹⁵¹	48.31 ⁷¹	26.05 ⁵⁰	90.61 ²⁰¹	18.459 ¹³⁴	11.84 ³⁵
Mar. 10.6	13.593 ¹³⁴	47.26 ¹⁰⁵	25.60 ⁴⁵	88.14 ²⁴⁷	18.341 ¹¹⁸	11.59 ²⁵
20.6	13.486 ¹⁰⁷	45.87 ¹³⁹	25.22 ³⁸	85.26 ²⁸⁸	18.247 ⁹⁴	11.47 ¹²
30.6	13.411 ⁷⁵	44.18 ¹⁶⁹	24.91 ³¹	82.04 ³²²	18.185 ⁶²	11.51 ⁴
Apr. 9.5	13.375 ³⁶	42.20 ¹⁹⁸	24.69 ²²	78.56 ³⁴⁸	18.161 ²⁴	11.73 ²²
19.5	13.382 ⁷	39.97 ²²³	24.57 ¹²	74.88 ³⁶⁸	18.179 ¹⁸	12.15 ⁴²
29.5	13.436 ⁵⁴	37.52 ²⁴⁵	24.55 ²	71.09 ³⁷⁹	18.243 ⁶⁴	12.80 ⁶⁵
May 9.5	13.537 ¹⁰¹	34.91 ²⁶¹	24.63 ⁸	67.28 ³⁸¹	18.353 ¹¹⁰	13.66 ⁸⁶
19.4	13.685 ¹⁴⁸	32.18 ²⁷³	24.81 ¹⁸	63.52 ³⁷⁶	18.507 ¹⁵⁴	14.73 ¹⁰⁷
29.4	13.877 ¹⁹²	29.40 ²⁷⁸	25.10 ²⁹	59.89 ³⁶³	18.703 ¹⁹⁶	16.01 ¹²⁸
June 8.4	14.108 ²³¹	26.62 ²⁷⁸	25.48 ³⁸	56.49 ³⁴⁰	18.936 ²³³	17.48 ¹⁴⁷
18.4	14.373 ²⁶⁵	23.91 ²⁷¹	25.94 ⁴⁶	53.38 ³¹¹	19.200 ²⁶⁴	19.10 ¹⁶²
28.3	14.666 ²⁹³	21.34 ²⁵⁷	26.47 ⁵³	50.65 ²⁷³	19.489 ²⁸⁹	20.83 ¹⁷³
July 8.3	14.978 ³¹²	18.97 ²³⁷	27.06 ⁵⁹	48.36 ²²⁹	19.793 ³⁰⁴	22.62 ¹⁷⁹
18.3	15.301 ³²³	16.86 ²¹¹	27.70 ⁶⁴	46.58 ¹⁷⁸	20.107 ³¹⁴	24.44 ¹⁸²
28.2	15.628 ³²⁷	15.08 ¹⁷⁸	28.36 ⁶⁶	45.35 ¹²³	20.423 ³¹⁶	26.23 ¹⁷⁹
Aug. 7.2	15.951 ³²³	13.67 ¹⁴¹	29.03 ⁶⁷	44.71 ⁶⁴	20.733 ³¹⁰	27.94 ¹⁷¹
17.2	16.262 ³¹¹	12.66 ¹⁰¹	29.68 ⁶⁵	44.68 ³	21.032 ²⁹⁹	29.53 ¹⁵⁹
27.2	16.555 ²⁹³	12.08 ⁵⁸	30.30 ⁶²	45.26 ⁵⁸	21.313 ²⁸¹	30.97 ¹⁴⁴
Sept. 6.1	16.824 ²⁶⁹	11.95 ¹³	30.87 ⁵⁷	46.42 ¹¹⁶	21.573 ²⁶⁰	32.21 ¹²⁴
16.1	17.065 ²⁴¹	12.25 ³⁰	31.38 ⁵¹	48.13 ¹⁷¹	21.808 ²³⁵	33.25 ¹⁰⁴
26.1	17.274 ²⁰⁹	12.96 ⁷¹	31.80 ⁴²	50.33 ²²⁰	22.016 ²⁰⁸	34.07 ⁸²
Oct. 6.1	17.450 ¹⁷⁶	14.05 ¹⁰⁹	32.13 ³³	52.93 ²⁶⁰	22.195 ¹⁷⁹	34.67 ⁶⁰
16.0	17.591 ¹⁴¹	15.45 ¹⁴⁰	32.36 ²³	55.83 ²⁹⁰	22.345 ¹⁵⁰	35.05 ³⁸
26.0	17.696 ¹⁰⁵	17.10 ¹⁶⁵	32.48 ¹²	58.92 ³⁰⁹	22.466 ¹²¹	35.23 ¹⁸
Nov. 5.0	17.767 ⁷¹	18.92 ¹⁸²	32.49 ¹	62.08 ³¹⁶	22.556 ⁹⁰	35.24 ¹
14.9	17.802 ³⁵	20.82 ¹⁹⁰	32.40 ⁹	65.18 ³¹⁰	22.617 ⁶¹	35.10 ¹⁴
24.9	17.804 ²	22.73 ¹⁹¹	32.21 ¹⁹	68.10 ²⁹²	22.649 ³²	34.83 ²⁷
Dec. 4.9	17.775 ²⁹	24.57 ¹⁸⁴	31.92 ²⁹	70.72 ²⁶²	22.652 ³	34.47 ³⁶
14.9	17.716 ⁵⁹	26.26 ¹⁶⁹	31.55 ³⁷	72.95 ²²³	22.626 ²⁶	34.04 ⁴³
24.8	17.629 ⁸⁷	27.74 ¹⁴⁸	31.11 ⁴⁴	74.71 ¹⁷⁶	22.572 ⁵⁴	33.56 ⁴⁸
34.8	17.519 ¹¹⁰	28.94 ¹²⁰	30.61 ⁵⁰	75.90 ¹¹⁹	22.494 ⁷⁸	33.05 ⁵¹
Mean Place	14.819	34.11	27.717	72.31	19.632	17.77
Sec δ , Tan δ	1.096	-0.448	2.789	-2.603	1.010	+0.143
L α , L δ	-0.01	+0.3	-0.04	+0.3	0.00	+0.3
ω α , ω δ	+0.02	+0.6	+0.14	+0.6	-0.01	+0.6
Authority and Catalogue No.	A. N.	137		138	A. E.	143

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Ceti.		δ Ceti.		γ^2 Ceti.	
	5.04	G 5	4.04	B 2	3.69	A 2
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 02 ^m 32	[°] 5 ['] 16	^h 02 ^m 35	[°] 0 ['] 00	^h 02 ^m 39	[°] 2 ['] 55
Jan. 0.8	05.178 ^s	44.14	47.041 ^s	62.58	33.717 ^s	55.57
10.8	05.084 ⁹⁴	43.55	46.949 ⁹²	61.86	33.626 ⁹¹	54.91
20.8	04.970 ¹¹⁴	42.99	46.835 ¹¹⁴	61.23	33.514 ¹¹²	54.31
30.7	04.840 ¹³⁰	42.48	46.705 ¹³⁰	60.71	33.384 ¹³⁰	53.79
Feb. 9.7	04.699 ¹⁴¹	42.03	46.564 ¹⁴¹	60.31	33.242 ¹⁴²	53.37
19.7	04.556 ¹⁴³	41.67	46.421 ¹⁴³	60.05	33.098 ¹⁴⁴	53.05
29.7	04.419 ¹³⁷	41.41	46.283 ¹³⁸	59.94	32.958 ¹⁴⁰	52.85
Mar. 10.6	04.297 ¹²²	41.28	46.159 ¹²⁴	60.01	32.831 ¹²⁷	52.80
20.6	04.197 ¹⁰⁰	41.28	46.056 ¹⁰³	60.26	32.726 ¹⁰⁵	52.92
30.6	04.128 ⁶⁹	41.47	45.983 ⁷³	60.71	32.650 ⁷⁶	53.22
Apr. 9.6	04.097 ³¹	41.85	45.947 ³⁶	61.38	32.611 ³⁹	53.71
19.5	04.107 ¹⁰	42.44	45.952 ⁵	62.26	32.613 ²	54.43
29.5	04.162 ⁵⁵	43.24	46.001 ⁴⁹	63.37	32.660 ⁴⁷	55.35
May 9.5	04.263 ¹⁰¹	44.26	46.096 ⁹⁵	64.69	32.752 ⁹²	56.48
19.4	04.408 ¹⁴⁵	45.48	46.235 ¹³⁹	66.20	32.889 ¹³⁷	57.82
29.4	04.596 ¹⁸⁸	46.90	46.416 ¹⁸¹	67.88	33.069 ¹⁸⁰	59.34
June 8.4	04.822 ²²⁶	48.48	46.635 ²¹⁹	69.70	33.287 ²¹⁸	61.01
18.4	05.078 ²⁵⁶	50.19	46.886 ²⁵¹	71.63	33.537 ²⁵⁰	62.80
28.3	05.360 ²⁸²	51.99	47.163 ²⁷⁷	73.60	33.813 ²⁷⁶	64.66
July 8.3	05.659 ²⁹⁹	53.84	47.458 ²⁹⁵	75.57	34.108 ²⁹⁵	66.55
18.3	05.969 ³¹⁰	55.68	47.765 ³⁰⁷	77.49	34.414 ³⁰⁶	68.41
28.3	06.282 ³¹³	57.47	48.076 ³¹¹	79.31	34.725 ³¹¹	70.21
Aug. 7.2	06.590 ³⁰⁸	59.14	48.383 ³⁰⁷	80.98	35.033 ³⁰⁸	71.87
17.2	06.889 ²⁹⁹	60.68	48.681 ²⁹⁸	82.45	35.332 ²⁹⁹	73.37
27.2	07.172 ²⁸³	62.04	48.964 ²⁸³	83.68	35.616 ²⁸⁴	74.65
Sept. 6.1	07.434 ²⁶²	63.18	49.227 ²⁶³	84.66	35.881 ²⁶⁵	75.71
16.1	07.673 ²³⁹	64.09	49.467 ²⁴⁰	85.37	36.124 ²⁴³	76.52
26.1	07.886 ²¹³	64.75	49.681 ²¹⁴	85.79	36.341 ²¹⁷	77.06
Oct. 6.1	08.071 ¹⁸⁵	65.19	49.867 ¹⁸⁶	85.93	36.531 ¹⁹⁰	77.35
16.0	08.227 ¹⁵⁶	65.39	50.024 ¹⁵⁷	85.83	36.693 ¹⁶²	77.41
26.0	08.354 ¹²⁷	65.39	50.152 ¹²⁸	85.50	36.826 ¹³³	77.25
Nov 5.0	08.451 ⁹⁷	65.20	50.250 ⁹⁸	84.99	36.929 ¹⁰³	76.90
15.0	08.519 ⁶⁸	64.87	50.318 ⁶⁸	84.34	37.003 ⁷⁴	76.41
24.9	08.557 ³⁸	64.43	50.357 ³⁹	83.58	37.046 ⁴³	75.81
Dec. 4.9	08.565 ⁸	63.91	50.366 ⁹	82.77	37.060 ¹⁴	75.15
14.9	08.544 ²¹	63.33	50.346 ²⁰	81.94	37.043 ¹⁷	74.45
24.8	08.495 ⁴⁹	62.74	50.297 ⁴⁹	81.14	36.999 ⁴⁴	73.75
34.8	08.420 ⁷⁵	62.15	50.223 ⁷⁴	80.38	36.927 ⁷²	73.07
Mean Place	05.539	48.01	47.356	68.01	34.029	60.02
Sec δ , Tan δ	1.004	+0.092	1.000	0.000	1.001	+0.051
L α , L δ	0.00	+0.3	0.00	+0.3	0.00	+0.3
ω α , ω δ	-0.01	+0.6	0.00	+0.6	0.00	+0.6
Authority and Catalogue No.	150		A. E. 154		A. N. 163	

APPARENT PLACES OF STARS, 1923.

291

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	π Ceti.		β Fornacis.		σ Arietis.	
	4.39	B 5	4.50	K 0	5.46	B 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 02 40	^c ['] 14 09	^h ^m 02 46	^c ['] 32 42	^h ^m 02 47	^o ['] 14 47
Jan. 0.8	41.494 ¹⁰²	55.68 ¹⁰³	04.684 ¹⁴¹	41.14 ¹³⁰	30.448 ⁸⁹	10.34 ³¹
10.8	41.392 ¹²⁴	56.71 ⁷⁹	04.543 ¹⁶⁴	42.44 ⁹¹	30.359 ¹¹⁴	10.03 ³⁷
20.8	41.268 ¹⁴¹	57.50 ⁵⁴	04.379 ¹⁸²	43.35 ⁴⁹	30.245 ¹³³	09.66 ⁴²
30.8	41.127 ¹⁵¹	58.04 ²⁷	04.197 ¹⁹²	43.84 ⁶	30.112 ¹⁴⁷	09.24 ⁴⁶
Feb. 9.7	40.976 ¹⁵⁴	58.31 ¹	04.005 ¹⁹⁴	43.90 ³⁸	29.965 ¹⁵²	08.78 ⁴⁸
19.7	40.822 ¹⁴⁹	58.30 ³⁰	03.811 ¹⁸⁹	43.52 ⁸⁰	29.813 ¹⁴⁹	08.30 ⁴⁷
29.7	40.673 ¹³⁵	58.00 ⁵⁸	03.622 ¹⁷³	42.72 ¹²¹	29.664 ¹³⁵	07.83 ⁴⁴
Mar. 10.6	40.538 ¹¹⁴	57.42 ⁸⁷	03.449 ¹⁴⁹	41.51 ¹⁵⁹	29.529 ¹¹⁴	07.39 ³⁷
20.6	40.424 ⁸⁵	56.55 ¹¹⁴	03.300 ¹¹⁸	39.92 ¹⁹⁵	29.415 ⁸³	07.02 ²⁸
30.6	40.339 ⁴⁹	55.41 ¹⁴¹	03.182 ⁷⁸	37.97 ²²⁶	29.332 ⁴⁶	06.74 ¹⁴
Apr. 9.6	40.290 ⁸	54.00 ¹⁶⁶	03.104 ³⁴	35.71 ²⁵⁴	29.286 ²	06.60 ²
19.5	40.282 ³⁷	52.34 ¹⁸⁹	03.070 ¹⁵	33.17 ²⁷⁷	29.284 ⁴⁴	06.62 ²¹
29.5	40.319 ⁸²	50.45 ²⁰⁹	03.085 ⁶⁶	30.40 ²⁹⁴	29.328 ⁹¹	06.83 ⁴²
May 9.5	40.401 ¹²⁸	48.36 ²²⁵	03.151 ¹¹⁶	27.46 ³⁰⁶	29.419 ¹³⁸	07.25 ⁶⁴
19.5	40.529 ¹⁷²	46.11 ²³⁷	03.267 ¹⁶⁵	24.40 ³¹⁰	29.557 ¹⁸³	07.89 ⁸⁵
29.4	40.701 ²¹⁰	43.74 ²⁴³	03.432 ²¹⁰	21.30 ³⁰⁹	29.740 ²²¹	08.74 ¹⁰⁶
June 8.4	40.911 ²⁴⁵	41.31 ²⁴⁵	03.642 ²⁵⁰	18.21 ²⁹⁹	29.961 ²⁵⁶	09.80 ¹²⁴
18.4	41.156 ²⁷³	38.86 ²³⁹	03.892 ²⁸³	15.22 ²⁸²	30.217 ²⁸³	11.04 ¹³⁹
28.3	41.429 ²⁹³	36.47 ²²⁹	04.175 ³¹⁰	12.40 ²⁵⁸	30.500 ³⁰³	12.43 ¹⁵¹
July 8.3	41.722 ³⁰⁷	34.18 ²¹¹	04.485 ³²⁸	09.82 ²²⁷	30.803 ³¹⁶	13.94 ¹⁶⁰
18.3	42.029 ³¹²	32.07 ¹⁸⁹	04.813 ³³⁸	07.55 ¹⁹⁰	31.119 ³²⁰	15.54 ¹⁶³
28.3	42.341 ³¹¹	30.18 ¹⁶⁰	05.151 ³⁴⁰	05.65 ¹⁴⁸	31.439 ³¹⁸	17.17 ¹⁶²
Aug. 7.2	42.652 ³⁰³	28.58 ¹²⁸	05.491 ³³³	04.17 ¹⁰¹	31.757 ³¹¹	18.79 ¹⁵⁸
17.2	42.955 ²⁸⁹	27.30 ⁹²	05.824 ³²⁰	Q3.16 ⁵²	32.068 ²⁹⁶	20.37 ¹⁴⁸
27.2	43.244 ²⁶⁹	26.38 ⁵⁴	06.144 ³⁰⁰	02.64 ⁴⁸	32.364 ²⁷⁸	21.85 ¹³⁶
Sept. 6.2	43.513 ²⁴⁶	25.84 ¹⁶	06.444 ²⁷⁴	02.62 ⁹⁶	32.642 ²⁵⁷	23.21 ¹²²
16.1	43.759 ²¹⁹	25.68 ²²	06.718 ²⁴³	03.10 ⁵²	32.899 ²³²	24.43 ¹⁰⁴
26.1	43.978 ¹⁹⁰	25.90 ⁵⁶	06.961 ²⁰⁹	04.06 ¹³⁹	33.131 ²⁰⁵	25.47 ⁸⁸
Oct. 6.1	44.168 ¹⁶⁰	26.46 ⁸⁸	07.170 ¹⁷²	05.45 ¹⁷⁵	33.336 ¹⁷⁸	26.35 ⁶⁹
16.0	44.328 ¹²⁸	27.34 ¹¹⁴	07.342 ¹³⁴	07.20 ²⁰⁴	33.514 ¹⁴⁸	27.04 ⁵³
26.0	44.456 ⁹⁶	28.48 ¹³⁴	07.476 ⁹⁵	09.24 ²²⁵	33.662 ¹¹⁹	27.57 ³⁷
Nov. 5.0	44.552 ⁶⁵	29.82 ¹⁴⁷	07.571 ⁵⁵	11.49 ²³⁶	33.781 ⁸⁹	27.94 ²³
15.0	44.617 ³³	31.29 ¹⁵³	07.626 ¹⁶	13.85 ²³⁶	33.870 ⁵⁷	28.17 ¹⁰
24.9	44.650 ¹	32.82 ¹⁵²	07.642 ²¹	16.21 ²²⁸	33.927 ²⁵	28.27 ¹
Dec. 4.9	44.651 ²⁹	34.34 ¹⁴⁶	07.621 ⁵⁸	18.49 ²⁰⁹	33.952 ⁶	28.26 ¹¹
14.9	44.622 ⁵⁷	35.80 ¹³²	07.563 ⁹²	20.58 ¹⁸⁴	33.946 ³⁸	28.15 ¹⁹
24.9	44.565 ⁸⁶	37.12 ¹¹⁵	07.471 ¹²³	22.42 ¹⁵²	33.908 ⁶⁸	27.96 ²⁷
34.8	44.479	38.27	07.348	23.94	33.840	27.69
Mean Place	41.671	46.15	04.573	26.90	30.773	11.10
Sec δ , Tan δ	1.031	-0.252	1.188	-0.642	1.034	+0.264
L α , L δ	0.00	+0.3	-0.01	+0.3	0.00	+0.3
ω α , ω δ	+0.01	+0.6	+0.03	+0.7	-0.01	+0.7
Authority and Catalogue No.	A. E.	164	A. E.	169		170

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ϵ Arietis m.		θ^1 Eridani.		α Ceti.	
	4.64	A 2	3.42	A 2	2.82	M a
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 02 55	^m 21 03	^h 02 55	^m 40 35	^h 02 58	^m 3 48
Jan. 0.8	05.058 ^s	13.47 ["]	32.202 ^s	48.03 ["]	30.544 ^s	26.14 ["]
10.8	04.969 ⁸⁹	13.38 ⁹	32.033 ¹⁶⁹	49.48 ¹⁴⁵	30.463 ⁸¹	25.50 ⁶⁴
20.8	04.852 ¹¹⁷	13.18 ²⁰	31.838 ¹⁹⁵	50.48 ¹⁰⁰	30.356 ¹⁰⁷	24.91 ⁵⁹
30.8	04.713 ¹³⁹	12.86 ³²	31.624 ²¹⁴	51.00 ⁵²	30.228 ¹²⁸	24.40 ⁵¹
Feb. 9.7	04.559 ¹⁵⁴	12.43 ⁴³	31.397 ²²⁷	51.04 ⁴	30.086 ¹⁴²	23.97 ⁴³
19.7	04.398 ¹⁶¹	11.92 ⁵¹	31.167 ²³⁰	50.59 ⁴⁵	29.937 ¹⁴⁹	23.64 ³³
29.7	04.240 ¹⁵⁸	11.36 ⁵⁶	30.943 ²²⁴	49.67 ⁹²	29.789 ¹⁴⁸	23.43 ²¹
Mar. 10.7	04.093 ¹⁴⁷	10.75 ⁶¹	30.734 ²⁰⁹	48.30 ¹³⁷	29.652 ¹³⁷	23.36 ⁷
20.6	03.969 ¹²⁴	10.16 ⁵⁹	30.550 ¹⁸⁴	46.51 ¹⁷⁹	29.534 ¹¹⁸	23.44 ⁸
30.6	03.876 ⁹³	09.60 ⁵⁶	30.400 ¹⁵⁰	44.34 ²¹⁷	29.444 ⁹⁰	23.69 ²⁵
Apr. 9.6	03.822 ⁵⁴	09.14 ⁴⁶	30.291 ¹⁰⁹	41.82 ²⁵²	29.388 ⁵⁶	24.13 ⁴⁴
19.5	03.812 ¹⁰	08.81 ³³	30.230 ⁶¹	39.02 ²⁸⁰	29.373 ¹⁵	24.77 ⁶⁴
29.5	03.850 ³⁸	08.64 ¹⁷	30.222 ⁸	35.99 ³⁰³	29.402 ²⁹	25.61 ⁸⁴
May 9.5	03.937 ⁸⁷	08.67 ³	30.268 ⁴⁶	32.78 ³²¹	29.477 ⁷⁵	26.66 ¹⁰⁵
19.5	04.073 ¹³⁶	08.91 ²⁴	30.370 ¹⁰²	29.47 ³³¹	29.597 ¹²⁰	27.91 ¹²⁵
29.4	04.256 ¹⁸³	09.38 ⁴⁷	30.524 ¹⁵⁴	26.13 ³³⁴	29.760 ¹⁶³	29.34 ¹⁴³
June 8.4	04.479 ²²³	10.08 ⁷⁰	30.729 ²⁰⁵	22.84 ³²⁹	29.964 ²⁰⁴	30.92 ¹⁵⁸
18.4	04.738 ²⁵⁹	10.98 ⁹⁰	30.980 ²⁵¹	19.67 ³¹⁷	30.201 ²³⁷	32.62 ¹⁷⁰
28.4	05.026 ²⁸⁸	12.08 ¹¹⁰	31.269 ²⁸⁹	16.70 ²⁹⁷	30.467 ²⁶⁶	34.41 ¹⁷⁹
July 8.3	05.335 ³⁰⁹	13.35 ¹²⁷	31.589 ³²⁰	14.01 ²⁶⁹	30.755 ²⁸⁸	36.23 ¹⁸²
18.3	05.659 ³²⁴	14.75 ¹⁴⁰	31.932 ³⁴³	11.66 ²³⁵	31.056 ³⁰¹	38.03 ¹⁸⁰
28.3	05.987 ³²⁸	16.24 ¹⁴⁹	32.290 ³⁵⁸	09.73 ¹⁹³	31.365 ³⁰⁹	39.77 ¹⁷⁴
Aug. 7.2	06.316 ³²⁹	17.78 ¹⁵⁴	32.652 ³⁶²	08.27 ¹⁴⁶	31.674 ³⁰⁹	41.41 ¹⁶⁴
17.2	06.637 ³²¹	19.34 ¹⁵⁶	33.011 ³⁵⁹	07.31 ⁹⁶	31.977 ³⁰³	42.89 ¹⁴⁸
27.2	06.946 ³⁰⁹	20.87 ¹⁵³	33.358 ³⁴⁷	06.90 ⁴¹	32.268 ²⁹¹	44.17 ¹²⁸
Sept. 6.2	07.237 ²⁹¹	22.35 ¹⁴⁸	33.686 ³²⁸	07.04 ¹⁴	32.543 ²⁷⁵	45.23 ¹⁰⁶
16.1	07.506 ²⁶⁹	23.73 ¹³⁸	33.987 ³⁰¹	07.71 ⁶⁷	32.798 ²⁵⁵	46.04 ⁸¹
26.1	07.752 ²⁴⁶	25.00 ¹²⁷	34.255 ²⁶⁸	08.90 ¹¹⁹	33.030 ²³²	46.60 ⁵⁶
Oct. 6.1	07.971 ²¹⁹	26.15 ¹¹⁵	34.487 ²³²	10.55 ¹⁶⁵	33.236 ²⁰⁶	46.90 ³⁰
16.1	08.162 ¹⁹¹	27.16 ¹⁰¹	34.677 ¹⁹⁰	12.59 ²⁰⁴	33.416 ¹⁸⁰	46.97 ⁷
26.0	08.324 ¹⁶²	28.03 ⁸⁷	34.825 ¹⁴⁸	14.94 ²³⁵	33.568 ¹⁵²	46.82 ¹⁵
Nov. 5.0	08.456 ¹³²	28.76 ⁷³	34.928 ¹⁰³	17.51 ²⁵⁷	33.691 ¹²³	46.49 ³³
15.0	08.556 ¹⁰⁰	29.37 ⁶¹	34.985 ⁵⁷	20.18 ²⁶⁷	33.784 ⁹³	46.01 ⁴⁸
24.9	08.624 ⁶⁸	29.84 ⁴⁷	34.998 ¹³	22.85 ²⁶⁷	33.846 ⁶²	45.43 ⁵⁸
Dec. 4.9	08.658 ³⁴	30.19 ³⁵	34.967 ³¹	25.41 ²⁵⁶	33.878 ³²	44.77 ⁶⁶
14.9	08.658	30.42 ²³	34.894 ⁷³	27.77 ²³⁶	33.878	44.08 ⁶⁹
24.9	08.624 ³⁴	30.54 ¹²	34.783 ¹¹¹	29.83 ²⁰⁶	33.846 ³²	43.39 ⁶⁹
34.8	08.557 ⁶⁷	30.53 ¹	34.635 ¹⁴⁸	31.53 ¹⁷⁰	33.785 ⁶¹	42.73 ⁶⁶
Mean Place	05.363	12.36	31.846	32.54	30.770	29.94
Sec δ , Tan δ	1.072	+0.385	1.317	-0.857	1.002	+0.067
L α , L δ	+0.01	+0.3	-0.02	+0.3	0.00	+0.3
ω α , ω δ	-0.02	+0.7	+0.04	+0.7	0.00	+0.7
Authority and Catalogue No.	175		A. E. 176		A. E. 179	

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Persei.		μ Horologii.		β Persei.	
	3.08	F 5-A 3	5.16	F 0	Var.	B 8
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 02 59	^m 53 13	^h 03 01	^m 60 00	^h 03 03	^m 40 40
Jan. 0.8	33.897 ⁵	41.93 ¹¹²	56.16 ³²	77.39 ¹⁵¹	28.280 ¹¹⁹	52.42 ⁶⁸
10.8	33.720 ²²²	43.05 ⁷³	55.84 ³⁶	78.90 ⁹⁷	28.161 ¹⁵⁵	53.10 ³⁹
20.8	33.498 ²⁵⁶	43.78 ³¹	55.48 ³⁸	79.87 ⁴⁰	28.006 ¹⁸³	53.49 ⁸
30.8	33.242	44.09	55.10	80.27	27.823	53.57
Feb. 9.7	32.963 ²⁷⁹	43.97 ¹²	54.70 ⁴⁰	80.09 ¹⁸	27.619 ²⁰⁴	53.34 ²³
19.7	32.676 ²⁸⁷	43.44 ⁵³	54.30 ⁴⁰	79.34 ⁷⁵	27.406 ²¹³	52.82 ⁵²
29.7	32.396 ²⁸⁰	42.51 ⁹³	53.91 ³⁹	78.06 ¹²⁸	27.196 ²¹⁰	52.03 ⁷⁹
Mar. 10.7	32.137 ²⁵⁹	41.24 ¹²⁷	53.55 ³⁶	76.27 ¹⁷⁹	27.001 ¹⁹⁵	51.00 ¹⁰³
20.6	31.915 ²²²	39.69 ¹⁵⁵	53.22 ³³	74.01 ²²⁶	26.833 ¹⁶⁸	49.80 ¹²⁰
30.6	31.743 ¹⁷²	37.93 ¹⁷⁶	52.94 ²⁸	71.34 ²⁶⁷	26.703 ¹³⁰	48.48 ¹³²
Apr. 9.6	31.631 ¹¹²	36.05 ¹⁸⁸	52.72 ²²	68.32 ³⁰²	26.619 ⁸⁴	47.11 ¹³⁷
19.5	31.583 ⁴⁸	34.12 ¹⁹³	52.57 ¹⁵	65.02 ³³⁰	26.590 ²⁹	45.76 ¹³⁵
29.5	31.616 ³³	32.24 ¹⁸⁸	52.50 ⁷	61.50 ³⁵²	26.620 ³⁰	44.49 ¹²⁷
May 9.5	31.721 ¹⁰⁵	30.48 ¹⁷⁶	52.49 ¹	57.85 ³⁶⁵	26.709 ⁸⁹	43.37 ¹¹²
19.5	31.898 ¹⁷⁷	28.91 ¹⁵⁷	52.57 ⁸	54.14 ³⁷¹	26.858 ¹⁴⁹	42.45 ⁹²
29.4	32.144 ²⁴⁶	27.60 ¹³¹	52.73 ¹⁶	50.45 ³⁶⁹	27.062 ²⁰⁴	41.77 ⁶⁸
June 8.4	32.452 ³⁰⁸	26.59 ¹⁰¹	52.96 ²³	46.87 ³⁵⁸	27.317 ²⁵⁵	41.36 ⁴¹
18.4	32.812 ³⁶⁰	25.91 ⁶⁸	53.25 ²⁹	43.49 ³³⁸	27.616 ²⁹⁹	41.25 ¹¹
28.4	33.217 ⁴⁰⁵	25.59 ³²	53.61 ³⁶	40.38 ³¹¹	27.951 ³³⁵	41.43 ¹⁸
July 8.3	33.654 ⁴³⁷	25.64 ⁵	54.02 ⁴¹	37.62 ²⁷⁶	28.312 ³⁶¹	41.90 ⁴⁷
18.3	34.115 ⁴⁶¹	26.05 ⁴¹	54.47 ⁴⁵	35.30 ²³²	28.692 ³⁸⁰	42.66 ⁷⁶
28.3	34.587 ⁴⁷²	26.82 ⁷⁷	54.95 ⁴⁶	33.47 ¹⁸³	29.080 ³⁸⁸	43.68 ¹⁰²
Aug. 7.2	35.061 ⁴⁷⁴	27.92 ¹¹⁰	55.45 ⁵⁰	32.19 ¹²⁸	29.471 ³⁹¹	44.93 ¹²⁵
17.2	35.527 ⁴⁶⁶	29.33 ¹⁴¹	55.94 ⁴⁹	34.49 ⁷⁰	29.856 ³⁸⁵	46.38 ¹⁴⁵
27.2	35.978 ⁴⁵¹	31.01 ¹⁶⁸	56.43 ⁴⁹	31.41 ⁸	30.226 ³⁷⁰	48.00 ¹⁶²
Sept. 6.2	36.405 ⁴²⁷	32.93 ¹⁹²	56.89 ⁴⁶	31.93 ⁵²	30.578 ³⁵²	49.75 ¹⁷⁵
16.1	36.804 ³⁹⁹	35.06 ²¹³	57.31 ⁴²	33.05 ¹¹²	30.907 ³²⁹	51.60 ¹⁸⁵
26.1	37.168 ³⁶⁴	37.35 ²²⁹	57.69 ³⁸	34.72 ¹⁶⁷	31.209 ³⁰²	53.50 ¹⁹⁰
Oct. 6.1	37.494 ³²⁶	39.75 ²⁴⁰	58.01 ³²	36.87 ²¹⁵	31.480 ²⁷¹	55.44 ¹⁹⁴
16.1	37.778 ²⁸⁴	42.24 ²⁴⁹	58.27 ²⁶	39.44 ²⁵⁷	31.719 ²³⁹	57.38 ¹⁹⁴
26.0	38.016 ²³⁸	44.76 ²⁵²	58.45 ¹⁸	42.32 ²⁸⁸	31.922 ²⁰³	59.29 ¹⁹¹
Nov. 5.0	38.205 ¹⁸⁹	47.27 ²⁵¹	58.56 ¹¹	45.40 ³⁰⁸	32.088 ¹⁶⁶	61.14 ¹⁸⁵
15.0	38.342 ¹³⁷	49.73 ²⁴⁶	58.60 ⁴	48.56 ³¹⁶	32.214 ¹²⁶	62.91 ¹⁷⁷
24.9	38.425 ⁸³	52.07 ²³⁴	58.56 ⁴	51.66 ³¹⁰	32.299 ⁸⁵	64.56 ¹⁶⁵
Dec. 4.9	38.451 ²⁶	54.24 ²¹⁷	58.46 ¹⁰	54.60 ²⁹⁴	32.341 ⁴²	66.06 ¹⁵⁰
14.9	38.419 ³²	56.20 ¹⁹⁶	58.29 ¹⁷	57.26 ²⁶⁶	32.338 ³	67.38 ¹³²
24.9	38.331 ⁸⁸	57.88 ¹⁶⁸	58.04 ²⁵	59.54 ²²⁸	32.291 ⁴⁷	68.48 ¹¹⁰
34.8	38.189 ¹⁴²	59.24 ¹³⁶	57.75 ²⁹	61.36 ¹⁸²	32.201 ⁹⁰	69.33 ⁸⁵
Mean Place	34.060	33.12	54.863	59.10	28.524	46.31
Sec δ, Tan δ	1.670	+1.338	2.001	-1.733	1.319	+0.860
L α, L δ	+0.02	+0.3	-0.03	+0.3	+0.02	+0.3
ω α, ω δ	-0.06	+0.7	+0.08	+0.7	-0.04	+0.7
Authority and Catalogue No.	A. E.	181	A. E.	183	A. E.	185

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Arietis.		τ^1 Arietis.		α Persei.	
	4.53	K 0	5.17	B 3	1.90	F 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 03 07	^m 19 27	^h 03 17	^m 20 53	^h 03 19	^m 49 36
Jan. 0.9	30.177 ^s	20.69 ["]	03.711 ^s	20.40 ["]	10.200 ^s	30.84 ["]
10.8	30.097 ⁸⁰	20.58 ¹¹	03.636 ⁷⁵	20.36 ⁴	10.063 ¹³⁷	31.98 ¹¹⁴
20.8	29.987 ¹¹⁰	20.37 ²¹	03.530 ¹⁰⁶	20.23 ¹³	09.879 ¹⁸⁴	32.77 ⁷⁹
30.8	29.854 ¹³³	20.08 ²⁹	03.396 ¹³⁴	20.00 ²³	09.659 ²²⁰	33.20 ⁴³
Feb. 9.8	29.703 ¹⁵¹	19.71 ³⁷	03.243 ¹⁵³	19.67 ³³	09.411 ²⁴⁸	33.24 ⁴
19.7	29.543 ¹⁶⁰	19.26 ⁴⁵	03.080 ¹⁶³	19.27 ⁴⁰	09.150 ²⁶¹	32.90 ³⁴
29.7	29.382 ¹⁶¹	18.77 ⁴⁹	02.915 ¹⁶⁵	18.79 ⁴⁸	08.889 ²⁶¹	32.19 ⁷¹
Mar. 10.7	29.232 ¹⁵⁰	18.26 ⁵¹	02.758 ¹⁵⁷	18.28 ⁵¹	08.642 ²⁴⁷	31.16 ¹⁰³
20.6	29.103 ¹²⁹	17.77 ⁴⁹	02.620 ¹³⁸	17.76 ⁵²	08.423 ²¹⁹	29.86 ¹³⁰
30.6	29.001 ¹⁰²	17.32 ⁴⁵	02.510 ¹¹⁰	17.27 ⁴⁹	08.247 ¹⁷⁶	28.34 ¹⁵²
Apr. 9.6	28.936 ⁶⁵	16.96 ³⁶	02.437 ⁷³	16.86 ⁴¹	08.124 ¹²³	26.69 ¹⁶⁵
19.6	28.915 ²¹	16.72 ²⁴	02.406 ³¹	16.55 ³¹	08.062 ⁶²	24.98 ¹⁷¹
29.5	28.940 ²⁵	16.64 ⁸	02.422 ¹⁶	16.38 ¹⁷	08.067 ⁵	23.29 ¹⁶⁹
May 9.5	29.015 ⁷⁵	16.74 ¹⁰	02.488 ⁶⁶	16.38 ¹⁹	08.141 ⁷⁴	21.69 ¹⁶⁰
19.5	29.138 ¹²³	17.04 ³⁰	02.602 ¹¹⁴	16.57 ¹⁹	08.284 ¹⁴³	20.25 ¹⁴⁴
29.5	29.307 ¹⁶⁹	17.55 ⁵¹	02.765 ¹⁶³	16.97 ⁴⁰	08.492 ²⁰⁸	19.02 ¹²³
June 8.4	29.518 ²¹¹	18.28 ⁷³	02.970 ²⁰⁵	17.58 ⁶¹	08.760 ²⁶⁸	18.05 ⁹⁷
18.4	29.766 ²⁴⁸	19.20 ⁹²	03.212 ²⁴²	18.38 ⁸⁰	09.081 ³²¹	17.38 ⁶⁷
28.4	30.045 ²⁷⁹	20.30 ¹¹⁰	03.486 ²⁷⁴	19.36 ⁹⁸	09.446 ³⁶⁵	17.03 ³⁵
July 8.3	30.346 ³⁰¹	21.55 ¹²⁵	03.785 ²⁹⁹	20.51 ¹¹⁵	09.846 ⁴⁰⁰	17.01 ²
18.3	30.663 ³¹⁷	22.92 ¹³⁷	04.100 ³¹⁵	21.78 ¹²⁷	10.270 ⁴²⁴	17.31 ³⁰
28.3	30.988 ³²⁵	24.36 ¹⁴⁴	04.426 ³²⁶	23.14 ¹³⁶	10.710 ⁴⁴⁰	17.93 ⁶²
Aug. 7.3	31.315 ³²⁷	25.85 ¹⁴⁹	04.754 ³²⁸	24.54 ¹⁴⁰	11.155 ⁴⁴⁵	18.86 ⁹³
17.2	31.636 ³²¹	27.34 ¹⁴⁹	05.079 ³²⁵	25.97 ¹⁴³	11.597 ⁴⁴²	20.07 ¹²¹
27.2	31.946 ³¹⁰	28.79 ¹⁴⁵	05.394 ³¹⁵	27.37 ¹⁴⁰	12.029 ⁴³²	21.52 ¹⁴⁵
Sept. 6.2	32.241 ²⁹⁵	30.16 ¹³⁷	05.696 ³⁰²	28.72 ¹³⁵	12.443 ⁴¹⁴	23.19 ¹⁶⁷
16.2	32.517 ²⁷⁶	31.43 ¹²⁷	05.979 ²⁸³	29.98 ¹²⁶	12.834 ³⁹¹	25.04 ¹⁸⁵
26.1	32.769 ²⁵²	32.59 ¹¹⁶	06.241 ²⁶²	31.13 ¹¹⁵	13.196 ³⁶²	27.04 ²⁰⁰
Oct. 6.1	32.997 ²²⁸	33.61 ¹⁰²	06.479 ²³⁸	32.16 ¹⁰³	13.527 ³³¹	29.16 ²¹²
16.1	33.199 ²⁰²	34.48 ⁸⁷	06.691 ²¹²	33.07 ⁹¹	13.821 ²⁹⁴	31.36 ²²⁰
26.0	33.372 ¹⁷³	35.21 ⁷³	06.876 ¹⁸⁵	33.85 ⁷⁸	14.075 ²⁵⁴	33.60 ²²⁴
Nov. 5.0	33.516 ¹⁴⁴	35.81 ⁶⁰	07.031 ¹⁵⁵	34.50 ⁶⁵	14.284 ²⁰⁹	35.85 ²²⁵
15.0	33.629 ¹¹³	36.29 ⁴⁸	07.155 ¹²⁴	35.04 ⁵⁴	14.448 ¹⁶⁴	38.06 ²²¹
25.0	33.709 ⁸⁰	36.64 ³⁵	07.247 ⁹²	35.47 ⁴³	14.562 ¹¹⁴	40.20 ²¹⁴
Dec. 4.9	33.756 ⁴⁷	36.89 ²⁵	07.303 ⁵⁶	35.80 ³³	14.623 ⁶¹	42.20 ²⁰⁰
14.9	33.768 ¹²	37.03 ¹⁴	07.324 ²¹	36.02 ²²	14.630 ⁷	44.03 ¹⁸³
24.9	33.745 ²³	37.08 ⁵	07.309 ¹⁵	36.15 ¹³	14.581 ⁴⁹	45.64 ¹⁶¹
34.9	33.688 ⁵⁷	37.04 ⁴	07.258 ⁵¹	36.18 ³	14.480 ¹⁰¹	46.97 ¹³³
Mean Place	30.422	19.95	03.915	19.21	10.286	23.07
Sec δ , Tan δ	1.061	+0.353	1.070	+0.382	1.543	+1.175
L α , L δ	+0.01	+0.3	+0.01	+0.3	+0.02	+0.3
ω α , ω δ	-0.02	+0.7	-0.02	+0.8	-0.05	+0.8
Authority and Catalogue No.	A. E.	187		197	A. E.	200

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Tauri.		f Tauri.		ε Eridani.	
	3·80	G 5	4·28	K 0	3·81	K 0
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 03 20	^m 8° 46'	^h 03 26	^m 12° 41'	^h 03 29	^m 9° 41'
Jan. 0·9	55·954 ^s	33·99 ["]	53·502 ^s	27·36 ["]	32·190 ^s	69·98 ["]
10·8	55·885 ⁶⁹	33·50 ⁴⁹	53·437 ⁶⁵	27·02 ³⁴	32·111 ⁷⁹	71·12 ¹¹⁴
20·8	55·786 ⁹⁹	33·03 ⁴⁷	53·340 ⁹⁷	26·67 ³⁵	32·004 ¹⁰⁷	72·03 ⁹¹
30·8	55·663 ¹²³	32·58 ⁴⁵	53·217 ¹²³	26·31 ³⁶	31·871 ¹³³	72·73 ⁷⁰
Feb. 9·8	55·520 ¹⁴³	32·18 ⁴⁰	53·073 ¹⁴⁴	25·95 ³⁶	31·720 ¹⁵¹	73·16 ⁴³
19·7	55·366 ¹⁵⁴	31·83 ³⁵	52·917 ¹⁵⁶	25·60 ³⁵	31·559 ¹⁶¹	73·39 ²³
29·7	55·210 ¹⁵⁶	31·55 ²⁸	52·758 ¹⁵⁹	25·27 ³³	31·393 ¹⁶⁶	73·36 ³
Mar. 10·7	55·061 ¹⁴⁹	31·35 ²⁰	52·604 ¹⁵⁴	24·98 ²⁹	31·236 ¹⁵⁷	73·05 ³¹
20·6	54·928 ¹³³	31·25 ¹⁰	52·466 ¹³⁸	24·76 ²²	31·092 ¹⁴⁴	72·48 ⁵⁷
30·6	54·821 ¹⁰⁷	31·28 ³	52·355 ¹¹¹	24·64 ¹²	30·973 ¹¹⁹	71·67 ⁸¹
Apr. 9·6	54·747 ⁷⁴	31·46 ¹⁸	52·276 ⁷⁹	24·63 ¹	30·888 ⁸⁵	70·62 ¹⁰⁵
19·6	54·713 ³⁴	31·80 ³⁴	52·237 ³⁹	24·76 ¹³	30·837 ⁵¹	69·29 ¹³³
29·5	54·723 ¹⁰	32·32 ⁵²	52·242 ⁵	25·05 ²⁹	30·830 ⁷	67·74 ¹⁵⁵
May 9·5	54·778 ⁵⁵	33·04 ⁷²	52·295 ⁵³	25·53 ⁴⁸	30·869 ³⁹	65·98 ¹⁷⁶
19·5	54·881 ¹⁰³	33·94 ⁹⁰	52·394 ⁹⁹	26·19 ⁶⁶	30·953 ⁸⁴	64·04 ¹⁹⁴
29·5	55·028 ¹⁴⁷	35·03 ¹⁰⁹	52·539 ¹⁴⁵	27·05 ⁸⁶	31·083 ¹⁵⁰	61·96 ²⁰⁸
June 8·4	55·216 ¹⁸⁸	36·29 ¹²⁶	52·726 ¹⁸⁷	28·07 ¹⁰²	31·252 ¹⁶⁹	59·76 ²²⁰
18·4	55·442 ²²⁶	37·69 ¹⁴⁰	52·951 ²²⁵	29·25 ¹¹⁸	31·459 ²⁰⁷	57·51 ²²⁵
28·4	55·698 ²⁵⁶	39·20 ¹⁵¹	53·207 ²⁵⁶	30·56 ¹³¹	31·696 ²³⁷	55·26 ²²⁵
July 8·3	55·978 ²⁸⁰	40·78 ¹⁵⁸	53·489 ²⁸²	31·97 ¹⁴¹	31·964 ²⁶⁸	53·08 ²¹⁸
18·3	56·275 ²⁹⁷	42·39 ¹⁶¹	53·788 ²⁹⁹	33·45 ¹⁴⁸	32·249 ²⁸⁵	51·01 ²⁰⁷
28·3	56·582 ³⁰⁷	43·99 ¹⁶⁰	54·098 ³¹⁰	34·94 ¹⁴⁹	32·547 ²⁹⁸	49·12 ¹⁸⁹
Aug. 7·3	56·894 ³¹²	45·52 ¹⁵³	54·413 ³¹⁵	36·41 ¹⁴⁷	32·850 ³⁰³	47·45 ¹⁶⁷
17·2	57·202 ³⁰⁸	46·96 ¹⁴⁴	54·726 ³¹³	37·81 ¹⁴⁰	33·152 ³⁰²	46·07 ¹³⁸
27·2	57·502 ³⁰⁰	48·25 ¹²⁹	55·031 ³⁰⁵	39·10 ¹²⁹	33·447 ²⁹⁵	44·99 ¹⁰⁸
Sept. 6·2	57·789 ²⁸⁷	49·36 ¹¹¹	55·325 ²⁹⁴	40·27 ¹¹⁷	33·730 ²⁸³	44·26 ⁷³
16·2	58·059 ²⁷⁰	50·28 ⁹²	55·601 ²⁷⁶	41·27 ¹⁰⁰	33·995 ²⁶⁵	43·89 ³⁷
26·1	58·308 ²⁴⁹	50·98 ⁷⁰	55·858 ²⁵⁷	42·09 ⁸²	34·241 ²⁴⁶	43·92 ³
Oct. 6·1	58·535 ²²⁷	51·46 ⁴⁸	56·094 ²³⁶	42·73 ⁶⁴	34·465 ²²⁴	44·26 ³⁴
16·1	58·737 ²⁰²	51·73 ²⁷	56·305 ²¹¹	43·18 ⁴⁵	34·664 ¹⁹⁹	44·92 ⁶⁶
26·0	58·913 ¹⁷⁶	51·82 ⁹	56·491 ¹⁸⁶	43·46 ²⁸	34·836 ¹⁷²	45·89 ⁹⁷
Nov. 5·0	59·062 ¹⁴⁹	51·73 ⁹	56·648 ¹⁵⁷	43·60 ¹⁴	34·976 ¹⁴⁰	47·07 ¹¹⁸
15·0	59·180 ¹¹⁸	51·50 ²³	56·776 ¹²⁸	43·60 ¹¹	35·087 ¹¹¹	48·43 ¹³⁶
25·0	59·268 ⁸⁸	51·17 ³³	56·872 ⁹⁶	43·49 ¹⁸	35·166 ⁷⁹	49·88 ¹⁴⁵
Dec. 4·9	59·323 ⁵⁵	50·75 ⁴²	56·935 ⁶³	43·31 ²⁵	35·212 ⁴⁶	51·35 ¹⁴⁷
14·9	59·345 ²²	50·29 ⁴⁶	56·964 ²⁹	43·06 ²⁵	35·224 ¹²	52·79 ¹⁴⁴
24·9	59·332 ¹³	49·80 ⁴⁹	56·958 ⁶	42·76 ³⁰	35·198 ²⁶	54·16 ¹³⁷
34·9	59·286 ⁴⁶	49·31 ⁴⁹	56·916 ⁴²	42·44 ³²	35·141 ⁵⁷	55·38 ¹²²
Mean Place	56·104	35·97	53·643	28·23	32·182	65·28
Sec δ, Tan δ	1·012	+0·154	1·025	+0·225	1·014	-0·171
L α, L δ	0·00	+0·3	0·00	+0·2	0·00	+0·2
ω α, ω δ	-0·01	+0·8	-0·01	+0·8	+0·01	+0·8
Authority and Catalogue No.	A. E.	201	A. E.	207	A. E.	210

No. 210. Corrected for a parallax of 0"·30.

APPARENT PLACES OF STARS, 1928,

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	45 G Horologii. 5.60 K o		τ^5 Eridani. 4.32 B 8		η^1 Tauri. 6.15 A o	
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 03 ^m 30	[°] 50 ['] 36	^h 03 ^m 30	[°] 21 ['] 52	^h 03 ^m 36	[°] 25 ['] 05
Jan. 0.9	26.768 ^s ₂₀₆	94.87 ["] ₁₈₆	36.530 ^s ₉₂	33.57 ["] ₁₄₇	27.838 ^s ₆₆	54.84 ["] ₁₉
10.8	26.562 ^s ₂₄₅	96.73 ["] ₁₃₈	36.438 ^s ₁₂₃	35.04 ["] ₁₁₇	27.772 ^s ₁₀₁	55.03 ["] ₇
20.8	26.317 ^s ₂₇₆	98.11 ["] ₈₇	36.315 ^s ₁₄₈	36.21 ["] ₈₆	27.671 ^s ₁₃₂	55.10 ["] ₆
30.8	26.041 ^s ₂₉₈	98.98 ["] ₂₁	36.167 ^s ₁₆₈	37.07 ["] ₄₉	27.539 ^s ₁₅₆	55.04 ["] ₁₈
Feb. 9.8	25.743 ^s ₃₀₈	99.31 ["] ₇₄	35.999 ^s ₁₇₉	37.56 ["] ₁₅	27.383 ^s ₁₇₁	54.86 ["] ₃₁
19.7	25.435 ^s ₃₀₈	99.10 ["] ₁₂₅	35.820 ^s ₁₈₂	37.71 ["] ₂₁	27.212 ^s ₁₇₆	54.55 ["] ₄₃
29.7	25.127 ^s ₂₉₄	98.36 ["] ₁₇₂	35.638 ^s ₁₇₅	37.50 ["] ₅₇	27.036 ^s ₁₇₁	54.12 ["] ₅₁
Mar. 10.7	24.833 ^s ₂₇₂	97.11 ["] ₂₁₇	35.463 ^s ₁₆₁	36.93 ["] ₉₃	26.865 ^s ₁₅₄	53.61 ["] ₅₇
20.7	24.561 ^s ₂₃₉	95.39 ["] ₂₅₅	35.302 ^s ₁₃₅	36.00 ["] ₁₂₅	26.711 ^s ₁₂₈	53.04 ["] ₅₉
30.6	24.322 ^s ₁₉₅	93.22 ["] ₂₈₉	35.167 ^s ₁₀₄	34.75 ["] ₁₅₈	26.583 ^s ₉₃	52.45 ["] ₅₆
Apr. 9.6	24.127 ^s ₁₄₄	90.67 ["] ₃₁₇	35.063 ^s ₆₅	33.17 ["] ₁₈₈	26.490 ^s ₅₀	51.89 ["] ₅₁
19.6	23.983 ^s ₈₅	87.78 ["] ₃₃₇	34.998 ^s ₂₁	31.29 ["] ₂₁₂	26.440 ^s ₃	51.38 ["] ₄₀
29.5	23.898 ^s ₂₃	84.61 ["] ₃₅₁	34.977 ^s ₂₆	29.17 ["] ₂₃₅	26.437 ^s ₄₈	50.98 ["] ₂₇
May 9.5	23.875 ^s ₄₀	81.24 ["] ₃₅₇	35.003 ^s ₇₃	26.82 ["] ₂₅₃	26.485 ^s ₉₉	50.71 ["] ₁₁
19.5	23.915 ^s ₁₀₅	77.73 ["] ₃₅₄	35.076 ^s ₁₂₀	24.29 ["] ₂₆₅	26.584 ^s ₁₄₈	50.60 ["] ₉
29.5	24.020 ^s ₁₆₇	74.16 ["] ₃₄₄	35.196 ^s ₁₆₄	21.64 ["] ₂₇₂	26.732 ^s ₁₉₃	50.69 ["] ₂₉
June 8.4	24.187 ^s ₂₂₄	70.62 ["] ₃₂₄	35.360 ^s ₂₀₄	18.92 ["] ₂₆₆	26.925 ^s ₂₃₄	50.98 ["] ₄₈
18.4	24.411 ^s ₂₇₆	67.18 ["] ₂₉₆	35.564 ^s ₂₃₉	16.19 ["] ₂₅₄	27.159 ^s ₂₆₉	51.46 ["] ₆₈
28.4	24.687 ^s ₃₂₀	63.94 ["] ₂₆₀	35.803 ^s ₂₆₇	13.53 ["] ₂₃₃	27.428 ^s ₂₉₆	52.14 ["] ₈₅
July 8.4	25.007 ^s ₃₅₈	60.98 ["] ₂₁₇	36.070 ^s ₂₈₉	10.99 ["] ₂₀₇	27.724 ^s ₃₁₅	52.99 ["] ₁₀₀
18.3	25.365 ^s ₃₈₃	58.38 ["] ₁₆₈	36.359 ^s ₃₀₄	08.66 ["] ₁₇₅	28.039 ^s ₃₂₉	53.99 ["] ₁₁₂
28.3	25.748 ^s ₄₀₁	56.21 ["] ₁₁₄	36.663 ^s ₃₁₂	06.59 ["] ₁₃₇	28.368 ^s ₃₃₅	55.11 ["] ₁₂₁
Aug. 7.3	26.149 ^s ₄₀₇	54.53 ["] ₅₅	36.975 ^s ₃₀₈	04.84 ["] ₉₆	28.703 ^s ₃₁₇	56.32 ["] ₁₂₄
17.2	26.556 ^s ₄₀₄	53.39 ["] ₄	37.287 ^s ₂₉₆	03.47 ["] ₅₂	29.038 ^s ₃₀₂	57.59 ["] ₁₁₈
27.2	26.960 ^s ₃₉₂	52.84 ["] ₆₄	37.595 ^s ₂₇₉	02.51 ["] ₄₀	29.367 ^s ₂₈₃	58.88 ["] ₁₁₀
Sept. 6.2	27.352 ^s ₃₆₈	52.88 ["] ₁₂₁	37.891 ^s ₂₅₉	01.99 ["] ₈₁	29.684 ^s ₂₆₂	60.15 ["] ₁₀₂
16.2	27.720 ^s ₃₃₈	53.52 ["] ₂₂₀	38.170 ^s ₁₇₆	01.93 ["] ₁₂₀	29.986 ^s ₂₁₀	61.39 ["] ₉₂
26.1	28.058 ^s ₃₀₀	54.73 ["] ₂₅₈	38.429 ^s ₁₄₅	02.33 ["] ₁₇₈	30.269 ^s ₁₈₁	62.57 ["] ₈₃
Oct. 6.1	28.358 ^s ₂₅₅	56.47 ["] ₃₀₁	38.663 ^s ₁₁₀	03.14 ["] ₂₀₆	30.531 ^s ₁₅₀	63.67 ["] ₇₄
16.1	28.613 ^s ₂₀₅	58.67 ["] ₃₀₅	38.869 ^s ₇₆	04.34 ["] ₂₀₇	30.768 ^s ₁₁₆	64.69 ["] ₆₅
26.1	28.818 ^s ₁₅₂	61.25 ["] ₂₉₈	39.045 ^s ₃₉	05.88 ["] ₁₉₉	30.978 ^s ₇₉	65.61 ["] ₅₆
Nov. 5.0	28.970 ^s ₉₆	64.10 ["] ₂₇₉	39.190 ^s ₂	07.66 ["] ₁₈₄	31.159 ^s ₃₈	66.44 ["] ₂₇
15.0	29.066 ^s ₃₉	67.11 ["] ₂₅₀	39.300 ^s ₇₀	09.62 ["] ₁₆₃	31.309 ^s ₃₈	67.18 ["] ₃₇
25.0	29.105 ^s ₁₉	70.16 ["] ₂₁₃	39.376 ^s ₃₄	11.68 ["] ₁₆₃	31.425 ^s ₃₈	67.83 ["] ₂₇
Dec. 4.9	29.086 ^s ₇₆	73.14 ["] ₂₅₀	39.415 ^s ₃₄	13.75 ["] ₁₆₃	31.504 ^s ₃₈	68.39 ["] ₃₇
14.9	29.010 ^s ₁₂₉	75.93 ["] ₂₁₃	39.417 ^s ₃₄	15.74 ["] ₁₆₃	31.546 ^s ₃₈	68.85 ["] ₃₇
24.9	28.881 ^s ₁₇₈	78.43 ["] ₂₁₃	39.383 ^s ₃₄	17.58 ["] ₁₆₃	31.546 ^s ₃₈	69.22 ["] ₃₇
34.9	28.703 ^s ₁₇₈	80.56 ["] ₂₁₃	39.313 ^s ₃₄	19.21 ["] ₁₆₃	31.508 ^s ₃₈	69.49 ["] ₃₇
Mean Place	25.782	79.96	36.348	24.15	27.960	52.56
Sec δ , Tan δ	1.576	-1.218	1.078	-0.401	1.104	+0.468
L α , L δ	-0.02	+0.2	-0.01	+0.2	+0.01	+0.2
ω α , ω δ	+0.05	+0.8	+0.02	+0.8	-0.02	+0.8
Authority and Catalogue No.	A. N.	211		212		217

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Persei.		δ Eridani.		17 Tauri.	
	3·10	B 5	3·72	K 0	3·81	B 5 p
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 03 37	^m 47 33	^h 03 39	^m 10 00	^h 03 40	^m 23 53
Jan. 0·9	47·331 ¹⁰⁹	38·99 ¹¹⁷	47·907 ⁶⁹	28·14 ¹¹⁶	35·578 ⁶²	19·78 ¹⁴
10·8	47·222 ¹⁵⁷	40·16 ⁸⁸	47·838 ¹⁰⁰	29·30 ⁹⁶	35·516 ⁹⁷	19·92 ⁵
20·8	47·065 ¹⁹⁸	41·04 ⁵⁴	47·738 ¹²⁷	30·26 ⁷⁵	35·419 ¹²⁸	19·97 ⁷
30·8	46·867	41·58	47·611	31·01	35·291	19·90
Feb. 9·8	46·638 ²²⁹	41·77 ¹⁹	47·463 ¹⁴⁸	31·52 ⁵¹	35·138 ¹⁵³	19·71 ¹⁹
19·7	46·390 ²⁴⁸	41·61 ¹⁶	47·301 ¹⁶²	31·78 ²⁶	34·969 ¹⁶⁹	19·42 ²⁹
29·7	46·137 ²⁵³	41·10 ⁵¹	47·134 ¹⁶⁷	31·78	34·794 ¹⁷⁵	19·03 ³⁹
Mar. 10·7	45·893 ²⁴⁴	40·27 ⁸³	46·971 ¹⁶³	31·52 ²⁶	34·624 ¹⁷⁰	18·56 ⁴⁷
20·7	45·672 ²²¹	39·17 ¹¹⁰	46·822 ¹⁴⁹	31·00 ⁵²	34·469 ¹⁵⁵	18·04 ⁵²
30·6	45·487 ¹⁸⁵	37·85 ¹³²	46·695 ¹²⁷	30·21 ⁷⁹	34·340 ¹²⁹	17·51 ⁵³
Apr. 9·6	45·350 ¹³⁷	36·38 ¹⁴⁷	46·598 ⁹⁷	29·16 ¹⁰⁵	34·245 ⁹⁵	17·00 ⁵¹
19·6	45·270 ⁸⁰	34·83 ¹⁵⁵	46·538 ⁶⁰	27·86 ¹³⁰	34·192 ⁵³	16·56 ⁴⁴
29·5	45·253 ¹⁷	33·26 ¹⁵⁷	46·520 ¹⁸	26·33 ¹⁵³	34·186 ⁶	16·22 ³⁴
May 9·5	45·302 ⁴⁹	31·76 ¹⁵⁰	46·547 ²⁷	24·58 ¹⁷⁵	34·229 ⁴³	16·02 ²⁰
19·5	45·418 ¹¹⁶	30·38 ¹³⁸	46·619 ⁷²	22·64 ¹⁹⁴	34·323 ⁹⁴	15·98 ⁴
29·5	45·597 ¹⁷⁹	29·19 ¹¹⁹	46·737 ¹¹⁸	20·54 ²¹⁰	34·466 ¹⁴³	16·13 ¹⁵
June 8·4	45·836 ²³⁹	28·22 ⁹⁷	46·897 ¹⁶⁰	18·34 ²²⁰	34·654 ¹⁸⁸	16·46 ³³
18·4	46·128 ²⁹²	27·51 ⁷¹	47·095 ¹⁹⁸	16·07 ²²⁷	34·882 ²²⁸	16·99 ⁵³
28·4	46·466 ³³⁸	27·09 ⁴²	47·326 ²³¹	13·80 ²²⁷	35·145 ²⁶³	17·70 ⁷¹
July 8·4	46·840 ³⁷⁴	26·97 ¹²	47·585 ²⁵⁹	11·57 ²²³	35·436 ²⁹¹	18·58 ⁸⁸
18·3	47·242 ⁴⁰²	27·14 ¹⁷	47·864 ²⁷⁹	09·46 ²¹¹	35·748 ³¹²	19·60 ¹⁰²
28·3	47·662 ⁴²⁰	27·61 ⁴⁷	48·158 ²⁹⁴	07·51 ¹⁹⁵	36·072 ³²⁴	20·72 ¹¹²
Aug. 7·3	48·091 ⁴²⁹	28·35 ⁷⁴	48·459 ³⁰¹	05·79 ¹⁷²	36·404 ³³²	21·93 ¹²¹
17·2	48·522 ⁴³¹	29·36 ¹⁰¹	48·761 ³⁰²	04·35 ¹⁴⁴	36·736 ³³²	23·18 ¹²⁵
27·2	48·946 ⁴²⁴	30·60 ¹²⁴	49·059 ²⁹⁸	03·22 ¹¹³	37·063 ³²⁷	24·43 ¹²⁵
Sept. 6·2	49·357 ⁴¹¹	32·04 ¹⁴⁴	49·347 ²⁸⁸	02·44 ⁷⁸	37·379 ³¹⁶	25·66 ¹²³
16·2	49·749 ³⁹²	33·66 ¹⁶²	49·621 ²⁷⁴	02·03 ⁴¹	37·680 ³⁰¹	26·85 ¹¹⁹
26·1	50·117 ³⁶⁸	35·42 ¹⁷⁶	49·876 ²⁵⁵	01·99 ⁴	37·964 ²⁸⁴	27·96 ¹¹¹
Oct. 6·1	50·457 ³⁴⁰	37·29 ¹⁸⁷	50·111 ²³⁵	02·30 ³¹	38·226 ²⁶²	28·99 ¹⁰³
16·1	50·765 ³⁰⁸	39·26 ¹⁹⁷	50·321 ²¹⁰	02·95 ⁶⁵	38·464 ²³⁸	29·92 ⁹³
26·1	51·038 ²⁷³	41·28 ²⁰²	50·506 ¹⁸⁵	03·89 ⁹⁴	38·677 ²¹³	30·76 ⁸⁴
Nov. 5·0	51·270 ²³²	43·32 ²⁰⁴	50·662 ¹⁵⁶	05·06 ¹¹⁷	38·861 ¹⁸⁴	31·50 ⁷⁴
15·0	51·458 ¹⁸⁸	45·36 ²⁰⁴	50·787 ¹²⁵	06·41 ¹³⁵	39·014 ¹⁵³	32·15 ⁶⁵
25·0	51·599 ¹⁴¹	47·34 ¹⁹⁸	50·881 ⁹⁴	07·87 ¹⁴⁶	39·133 ¹¹⁹	32·71 ⁵⁶
Dec. 4·9	51·689 ⁹⁰	49·23 ¹⁸⁹	50·940 ⁵⁹	09·36 ¹⁴⁹	39·216 ⁸³	33·19 ⁴⁸
14·9	51·726 ³⁷	50·99 ¹⁷⁶	50·965 ²⁵	10·84 ¹⁴⁸	39·261 ⁴⁵	33·58 ³⁹
24·9	51·708 ¹⁸	52·56 ¹⁵⁷	50·955 ¹⁰	12·23 ¹³⁹	39·267 ⁶	33·89 ³¹
34·9	51·634 ⁷⁴	53·92 ¹³⁶	50·909 ⁴⁶	13·50 ¹²⁷	39·233 ³⁴	34·10 ²¹
Mean Place	47·338	31·96	47·837	21·90	35·684	17·79
Sec δ, Tan δ	1·482	+1·094	1·015	-0·176	1·094	+0·443
L α, L δ	+0·02	+0·2	0·00	+0·2	+0·01	+0·2
ω α, ω δ	-0·04	+0·8	+0·01	+0·8	-0·02	+0·8
Authority and Catalogue No.	A. E.	218	A. N.	221	A. N.	224

(12961)

(NAUTICAL ALMANAC, 1928)

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APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag., Spect.	η Tauri.		γ Hydri.		ζ Persei.	
	2.96	B 5 p	3.17	M a.	2.91	B 1
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 03 43	^m 23 52	^h 03 48	^m 74 27	^h 03 49	^m 31 40
Jan. 5.9	11.875 ^s	63.68	24.33 ^s	51.55	35.941 ^s	19.88
10.9	11.816 ⁵⁹	63.83 ¹⁵	23.69 ⁶⁴	53.51 ¹⁹⁶	35.879 ⁶²	20.41 ⁵³
20.8	11.720 ⁹⁶	63.88 ⁵	22.97 ⁷²	54.95 ¹⁴⁴	35.777 ¹⁰²	20.77 ³⁶
30.8	11.592 ¹²⁸	63.82 ⁶	22.17 ⁸⁰	55.83 ⁸⁸	35.640 ¹³⁷	20.96 ¹⁹
Feb. 9.8	11.440 ¹⁵²	63.64 ¹⁸	21.33 ⁸⁴	56.13 ³⁰	35.474 ¹⁶⁶	20.95 ¹
19.7	11.272 ¹⁶⁸	63.36 ²⁸	20.47 ⁸⁶	55.84 ²⁹	35.291 ¹⁸³	20.76 ¹⁹
29.7	11.097 ¹⁷⁵	62.98 ³⁸	19.61 ⁸⁶	54.99 ⁸⁵	35.099 ¹⁹²	20.38 ³⁸
Mar. 10.7	10.926 ¹⁷¹	62.53 ⁴⁵	18.78 ⁸³	53.60 ¹³⁹	34.910 ¹⁸⁹	19.85 ⁵³
20.7	10.769 ¹⁵⁷	62.03 ⁵⁰	18.00 ⁷⁸	51.71 ¹⁸⁹	34.737 ¹⁷³	19.18 ⁶⁷
30.6	10.638 ¹³¹	61.51 ⁵²	17.29 ⁷¹	49.36 ²³⁵	34.590 ¹⁴⁷	18.42 ⁷⁶
Apr. 9.6	10.541 ⁹⁷	61.01 ⁵⁰	16.67 ⁶²	46.62 ²⁷⁴	34.479 ¹¹¹	17.62 ⁸⁰
19.6	10.486 ⁵⁵	60.57 ⁴⁴	16.16 ⁵¹	43.54 ³⁰⁸	34.412 ⁶⁷	16.82 ⁸⁰
29.6	10.477 ⁹	60.23 ³⁴	15.77 ³⁹	40.19 ³³⁵	34.394 ¹⁸	16.07 ⁷⁵
May 9.5	10.517 ⁴⁰	60.03 ²⁰	15.51 ²⁶	36.64 ³⁵⁵	34.430 ³⁶	15.42 ⁶⁵
19.5	10.608 ⁹¹	59.98 ⁵	15.38 ¹³	32.98 ³⁶⁶	34.519 ⁸⁹	14.90 ⁵²
29.5	10.748 ¹⁴⁵	60.12 ¹⁴	15.39 ¹	29.28 ³⁷⁰	34.660 ¹⁴¹	14.56 ³⁴
June 8.4	10.934 ¹⁸⁶	60.44 ³²	15.55 ¹⁶	25.62 ³⁶⁶	34.850 ¹⁹⁰	14.41 ¹⁵
18.4	11.160 ²²⁶	60.96 ⁵²	15.84 ²⁹	22.10 ³⁵²	35.085 ²³⁵	14.47 ⁶
28.4	11.421 ²⁶¹	61.65 ⁶⁹	16.26 ⁴²	18.80 ³³⁰	35.357 ²⁷²	14.73 ²⁶
July 8.4	11.710 ²⁸⁹	62.51 ⁸⁶	16.79 ⁵³	15.80 ³⁰⁰	35.561 ³⁰⁴	15.20 ⁴⁷
18.3	12.021 ³¹¹	63.51 ¹⁰⁰	17.43 ⁶⁴	13.19 ²⁶¹	35.988 ³²⁷	15.86 ⁶⁶
28.3	12.345 ³²⁴	64.62 ¹¹¹	18.15 ⁷²	11.04 ²¹⁵	36.331 ³⁴³	16.69 ⁸³
Aug. 7.3	12.677 ³³²	65.80 ¹¹⁸	18.93 ⁷⁸	09.42 ¹⁶²	36.683 ³⁵²	17.67 ⁹⁸
17.3	13.009 ³³²	67.03 ¹²³	19.76 ⁸³	08.37 ¹⁰⁵	37.037 ³⁵⁴	18.76 ¹⁰⁹
27.2	13.337 ³²⁸	68.28 ¹²⁵	20.60 ⁸⁴	07.93 ⁴⁴	37.387 ³⁵⁰	19.93 ¹¹⁷
Sept. 6.2	13.654 ³¹⁷	69.49 ¹²¹	21.43 ⁸³	08.13 ²⁰	37.727 ³⁴⁰	21.16 ¹²³
16.2	13.956 ³⁰²	70.66 ¹¹⁷	22.23 ⁸⁰	08.94 ⁸¹	38.053 ³²⁶	22.42 ¹²⁶
26.1	14.241 ²⁸⁵	71.77 ¹¹¹	22.96 ⁷³	10.36 ¹⁴²	38.361 ³⁰⁸	23.69 ¹²⁷
Oct. 6.1	14.505 ²⁶⁴	72.78 ¹⁰¹	23.61 ⁶⁵	12.33 ¹⁹⁷	38.648 ²⁸⁷	24.95 ¹²⁶
16.1	14.746 ²⁴¹	73.70 ⁹²	24.16 ⁵⁵	14.78 ²⁴⁵	38.911 ²⁶³	26.17 ¹²²
26.1	14.961 ²¹⁵	74.52 ⁸²	24.58 ⁴²	17.62 ²⁸⁴	39.147 ²³⁶	27.36 ¹¹⁹
Nov. 5.0	15.147 ¹⁸⁶	75.25 ⁷³	24.86 ²⁸	20.73 ³¹¹	39.354 ²⁰⁷	28.50 ¹¹⁴
15.0	15.303 ¹⁵⁶	75.89 ⁶⁴	24.99 ¹³	24.01 ³²⁸	39.527 ¹⁷³	29.58 ¹⁰⁸
25.0	15.425 ¹²²	76.44 ⁵⁵	24.97 ²	27.31 ³³⁰	39.664 ¹³⁷	30.60 ¹⁰²
Dec. 5.0	15.511 ⁸⁶	76.91 ⁴⁷	24.81 ¹⁶	30.53 ³²²	39.762 ⁹⁸	31.54 ⁹⁴
14.9	15.559 ⁴⁸	77.30 ³⁹	24.50 ³¹	33.53 ³⁰⁰	39.818 ⁵⁶	32.39 ⁸⁵
24.9	15.567 ⁸	77.61 ³¹	24.05 ⁴⁵	36.21 ²⁶⁸	39.830 ¹²	33.14 ⁷⁵
34.9	15.535 ³²	77.82 ²¹	23.48 ⁵⁷	38.46 ²²⁵	39.799 ³¹	33.75 ⁶¹
Mean Place	11.970	61.69	20.009	35.90	36.000	16.20
Sec δ , Tan δ	1.094	+0.443	3.733	-3.596	1.175	+0.617
L a, L δ	+0.01	+0.2	-0.08	+0.2	+0.01	+0.2
ω a, ω δ	-0.02	+0.8	+0.13	+0.8	-0.02	+0.8
Authority and Catalogue No.	A. E.	228	A. E.	234	A. E.	235

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ε Persei.		γ Eridani.		A Tauri.	
	2.95	B 1	3.19	K 5	4.50	K 0
Mean Solar Date	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 03 52	^m 39 48	^h 03 54	^m 13 42	^h 04 00	^m 21 53
Jan. 0.9	60.902 ^s	17.70 ["]	40.281 ^s	50.57 ["]	26.006 ^s	13.22 ["]
10.9	60.830 ⁷²	18.62 ⁹²	40.217 ⁶⁴	51.94 ¹³⁷	25.961 ⁴⁵	13.31 ⁹
20.8	60.713 ¹¹⁷	19.31 ⁶⁹	40.120 ⁹⁷	53.09 ¹¹⁵	25.878 ⁸³	13.34 ³
30.8	60.557 ¹⁵⁶	19.75 ⁴⁴	39.993 ¹²⁷	53.99 ⁹⁰	25.761 ¹¹⁷	13.28 ⁶
Feb. 9.8	60.369 ¹⁸⁸	19.93 ¹⁸	39.843 ¹⁵⁰	54.61 ⁶²	25.616 ¹⁴⁵	13.15 ¹³
19.7	60.160 ²⁰⁹	19.83 ¹⁰	39.676 ¹⁶⁷	54.94 ³³	25.452 ¹⁶⁴	12.94 ²¹
29.7	59.942 ²¹⁸	19.47 ³⁶	39.502 ¹⁷⁴	54.98 ⁴	25.277 ¹⁷⁵	12.65 ²⁹
Mar. 10.7	59.728 ²¹⁴	18.86 ⁶¹	39.330 ¹⁷²	54.72 ²⁶	25.104 ¹⁷³	12.30 ³⁵
20.7	59.530 ¹⁹⁸	18.04 ⁸²	39.169 ¹⁶¹	54.16 ⁵⁶	24.942 ¹⁶²	11.92 ³⁸
30.6	59.361 ¹⁶⁹	17.05 ⁹⁹	39.029 ¹⁴⁰	53.32 ⁸⁴	24.802 ¹⁴⁰	11.52 ⁴⁰
Apr. 9.6	59.232 ¹²⁹	15.95 ¹¹⁰	38.917 ¹¹²	52.20 ¹¹²	24.694 ¹⁰⁸	11.15 ³⁷
19.6	59.151 ⁸¹	14.79 ¹¹⁶	38.841 ⁷⁶	50.80 ¹⁴⁰	24.625 ⁶⁹	10.83 ³²
29.6	59.124 ²⁷	13.63 ¹¹⁶	38.806 ³⁵	49.15 ¹⁶⁵	24.601 ²⁴	10.61 ²²
May 9.5	59.156 ³²	12.53 ¹¹⁰	38.815 ⁹	47.28 ¹⁸⁷	24.625 ²⁴	10.51 ¹⁰
19.5	59.246 ⁹⁰	11.55 ⁹⁸	38.870 ⁵⁵	45.22 ²⁰⁶	24.698 ⁷³	10.55 ⁴
29.5	59.394 ¹⁴⁸	10.73 ⁸²	38.971 ¹⁰¹	43.00 ²²²	24.820 ¹²²	10.76 ²¹
June 8.4	59.596 ²⁰²	10.11 ⁶²	39.115 ¹⁴⁴	40.67 ²³³	24.987 ¹⁶⁷	11.14 ³⁸
18.4	59.847 ²⁵¹	09.70 ⁴¹	39.299 ¹⁸⁴	38.29 ²³⁸	25.195 ²⁰⁸	11.69 ⁵⁵
28.4	60.140 ²⁹³	09.53 ¹⁷	39.518 ²¹⁹	35.91 ²³⁸	25.440 ²⁴⁵	12.39 ⁷⁰
July 8.4	60.467 ³²⁷	09.61 ⁸	39.767 ²⁴⁹	33.59 ²³²	25.714 ²⁷⁴	13.23 ⁸⁴
18.3	60.820 ³⁵³	09.93 ³²	40.039 ²⁷²	31.40 ²¹⁹	26.012 ²⁹⁸	14.20 ⁹⁷
28.3	61.192 ³⁷²	10.47 ⁵⁴	40.327 ²⁸⁸	29.40 ²⁰⁰	26.326 ³¹⁴	15.25 ¹⁰⁵
Aug. 7.3	61.575 ³⁸³	11.22 ⁷⁵	40.626 ²⁹⁹	27.65 ¹⁷⁵	26.649 ³²³	16.36 ¹¹¹
17.3	61.960 ³⁸⁵	12.18 ⁹⁶	40.929 ³⁰³	26.19 ¹⁴⁶	26.976 ³²⁷	17.49 ¹¹³
27.2	62.343 ³⁸³	13.28 ¹¹⁰	41.230 ³⁰¹	25.09 ¹¹⁰	27.301 ³²⁵	18.61 ¹¹²
Sept. 6.2	62.716 ³⁷³	14.52 ¹²⁴	41.523 ²⁹³	24.36 ⁷³	27.619 ³¹⁸	19.71 ¹¹⁰
16.2	63.076 ³⁶⁰	15.87 ¹³⁵	41.804 ²⁸¹	24.03 ³³	27.925 ³⁰⁶	20.73 ¹⁰²
26.1	63.416 ³⁴⁰	17.30 ¹⁴³	42.069 ²⁶⁵	24.09 ⁶	28.216 ²⁹¹	21.67 ⁹⁴
Oct. 6.1	63.734 ³¹⁸	18.80 ¹⁵⁰	42.315 ²⁴⁶	24.56 ⁴⁷	28.489 ²⁷³	22.51 ⁸⁴
16.1	64.026 ²⁹²	20.34 ¹⁵⁴	42.538 ²²³	25.39 ⁸³	28.741 ²⁵²	23.24 ⁷³
26.1	64.288 ²⁶²	21.90 ¹⁵⁶	42.735 ¹⁹⁷	26.53 ¹¹⁴	28.970 ²²⁹	23.88 ⁶⁴
Nov. 5.0	64.517 ²²⁹	23.45 ¹⁵⁵	42.904 ¹⁶⁹	27.94 ¹⁴¹	29.172 ²⁰²	24.43 ⁵⁵
15.0	64.709 ¹⁹²	24.98 ¹⁵³	43.042 ¹³⁸	29.54 ¹⁶⁰	29.344 ¹⁷²	24.89 ⁴⁶
25.0	64.861 ¹⁵²	26.48 ¹⁵⁰	43.148 ¹⁰⁶	31.26 ¹⁷²	29.484 ¹⁴⁰	25.26 ³⁷
Dec. 5.0	64.968 ¹⁰⁷	27.91 ¹⁴³	43.219 ⁷¹	33.03 ¹⁷⁷	29.587 ¹⁰³	25.57 ³¹
14.9	65.029 ⁶¹	29.24 ¹³³	43.253 ³⁴	34.77 ¹⁷⁴	29.652 ⁶⁵	25.82 ²⁵
24.9	65.040 ¹¹	30.44 ¹²⁰	43.251 ²	36.41 ¹⁶⁴	29.677 ²⁵	26.00 ¹⁸
34.9	65.002 ³⁸	31.48 ¹⁰⁴	43.211 ⁴⁰	37.90 ¹⁴⁹	29.662 ¹⁵	26.11 ¹¹
Mean Place	60.908	12.41	40.107	44.09	26.032	11.64
Sec δ, Tan δ	1.302	+0.833	1.029	-0.244	1.078	+0.402
L a, L δ	+0.02	+0.2	-0.01	+0.2	+0.01	+0.2
ω a, ω δ	-0.03	+0.8	+0.01	+0.9	-0.01	+0.9
Authority and Catalogue No.	A. E.	238	A. E.	240		244

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	43 Tauri. 5.67 G 5		o ¹ Eridani. 4.14 F 2		a Horologii. 3.83 K o	
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 04 04	^m 19 25	^h 04 08	^m 7 01	^h 04 11	^m 42 27
Jan. 0.9	58.028 ^s	13.95	21.072 ^s	31.25	37.714 ^s	86.09
10.9	57.988 ⁴⁰	13.94 ¹	21.025 ⁴⁷	32.43 ¹¹⁸	37.587 ¹²⁷	88.30 ²²¹
20.8	57.910 ⁷⁸	13.88 ⁶	20.942 ⁸³	33.45 ¹⁰²	37.416 ¹⁷¹	90.11 ¹⁸¹
30.8	57.797 ¹¹³	13.76 ¹²	20.829 ¹¹³	34.27 ⁸²	37.208 ²⁰⁸	91.47 ¹³⁶
Feb. 9.8	57.656 ¹⁴¹	13.60 ¹⁶	20.689 ¹⁴⁰	34.87 ⁶⁰	36.972 ²³⁶	92.35 ⁸⁸
19.8	57.495 ¹⁶¹	13.38 ²²	20.530 ¹⁵⁹	35.25 ³⁸	36.715 ²⁵⁷	92.73 ³⁸
29.7	57.324 ¹⁷¹	13.11 ²⁷	20.362 ¹⁶⁸	35.39 ¹⁴	36.448 ²⁶⁷	92.61 ¹²
Mar. 10.7	57.152 ¹⁷²	12.82 ²⁹	20.192 ¹⁷⁰	35.30 ⁹	36.183 ²⁶⁵	91.99 ⁶²
20.7	56.991 ¹⁶¹	12.51 ³¹	20.032 ¹⁶⁰	34.97 ³³	35.929 ²⁵⁴	90.89 ¹¹⁰
30.6	56.851 ¹⁴⁰	12.21 ³⁰	19.890 ¹⁴²	34.39 ⁵⁸	35.699 ²³⁰	89.34 ¹⁵⁵
Apr. 9.6	56.742 ¹⁰⁹	11.96 ²⁵	19.775 ¹¹⁵	33.57 ⁸²	35.501 ¹⁹⁸	87.38 ¹⁹⁶
19.6	56.670 ⁷²	11.76 ²⁰	19.694 ⁸¹	32.52 ¹⁰⁵	35.343 ¹⁵⁸	85.04 ²³⁴
29.6	56.642 ²⁸	11.68 ⁸	19.653 ⁴¹	31.24 ¹²⁸	35.233 ¹¹⁰	82.38 ²⁶⁶
May 9.5	56.661 ¹⁹	11.71 ³	19.656 ³	29.75 ¹⁴⁹	35.175 ⁵⁸	79.44 ²⁹⁴
19.5	56.728 ⁶⁷	11.90 ¹⁹	19.703 ⁴⁷	28.06 ¹⁶⁹	35.173 ²	76.30 ³¹⁴
29.5	56.844 ¹¹⁶	12.24 ³⁴	19.796 ⁹³	26.22 ¹⁸⁴	35.227 ⁵⁴	73.01 ³²⁹
June 8.5	57.004 ¹⁶⁰	12.74 ⁵⁰	19.931 ¹³⁵	24.25 ¹⁹⁷	35.337 ¹¹⁰	69.66 ³³⁵
18.4	57.206 ²⁰²	13.41 ⁶⁷	20.106 ¹⁷⁵	22.19 ²⁰⁶	35.499 ¹⁶²	66.32 ³³⁴
28.4	57.443 ²³⁷	14.22 ⁸¹	20.316 ²¹⁰	20.09 ²¹⁰	35.709 ²¹⁰	63.08 ³²⁴
July 8.4	57.711 ²⁶⁸	15.15 ⁹³	20.557 ²⁴¹	18.01 ²⁰⁸	35.963 ²⁵⁴	60.02 ³⁰⁶
18.3	58.002 ²⁹¹	16.18 ¹⁰³	20.821 ²⁶⁴	16.01 ²⁰⁰	36.253 ²⁹⁰	57.22 ²⁸⁰
28.3	58.308 ³⁰⁶	17.28 ¹¹⁰	21.102 ²⁸¹	14.15 ¹⁸⁶	36.572 ³¹⁹	54.77 ²⁴⁵
Aug. 7.3	58.626 ³¹⁸	18.42 ¹¹⁴	21.395 ²⁹³	12.48 ¹⁶⁷	36.912 ³⁴⁰	52.74 ²⁰³
17.3	58.947 ³²¹	19.56 ¹¹⁴	21.693 ²⁹⁸	11.04 ¹⁴⁴	37.266 ³⁵⁴	51.17 ¹⁵⁷
27.2	59.267 ³²⁰	20.65 ¹⁰⁹	21.991 ²⁹⁸	09.89 ¹¹⁵	37.624 ³⁵⁸	50.15 ¹⁰²
Sept. 6.2	59.581 ³¹⁴	21.70 ¹⁰⁵	22.284 ²⁹³	09.06 ⁸³	37.980 ³⁵⁶	49.69 ⁴⁶
16.2	59.884 ³⁰³	22.65 ⁹⁵	22.567 ²⁸³	08.58 ⁴⁸	38.325 ³⁴⁵	49.82 ¹³
26.2	60.173 ²⁸⁹	23.48 ⁸³	22.836 ²⁶⁹	08.45 ¹³	38.652 ³²⁷	50.53 ⁷¹
Oct. 6.1	60.444 ²⁷¹	24.21 ⁷³	23.088 ²⁵²	08.66 ²¹	38.954 ³⁰²	51.79 ¹²⁶
16.1	60.696 ²⁵²	24.82 ⁶¹	23.320 ²³²	09.20 ⁵⁴	39.227 ²⁷³	53.56 ¹⁷⁷
26.1	60.925 ²²⁹	25.30 ⁴⁸	23.530 ²¹⁰	10.04 ⁸⁴	39.463 ²³⁶	55.77 ²²¹
Nov. 5.0	61.128 ²⁰³	25.68 ³⁸	23.813 ¹⁸³	11.12 ¹⁰⁸	39.659 ¹⁹⁶	58.33 ²⁵⁶
15.0	61.302 ¹⁷⁴	25.97 ²⁹	23.868 ¹⁵⁵	12.38 ¹²⁶	39.811 ¹⁵²	61.14 ²⁸¹
25.0	61.444 ¹⁴²	26.18 ²¹	23.992 ¹²⁴	13.77 ¹³⁹	39.914 ¹⁰³	64.09 ²⁹⁵
Dec. 5.0	61.550 ¹⁰⁶	26.33 ¹⁵	24.081 ⁸⁹	15.21 ¹⁴⁴	39.968 ⁵⁴	67.07 ²⁹⁸
14.9	61.619 ⁶⁹	26.42 ⁹	24.135 ⁵⁴	16.66 ¹⁴⁵	39.971 ³	69.97 ²⁹⁰
24.9	61.648 ²⁹	26.47 ⁵	24.152 ¹⁷	18.04 ¹³⁸	39.923 ⁴⁸	72.68 ²⁷¹
34.9	61.637 ¹¹	26.48 ¹	24.130 ²²	19.32 ¹²⁸	39.826 ⁹⁷	75.10 ²⁴²
Mean Place	58.035	12.88	20.920	26.75	36.820	75.47
Sec δ , Tan δ	1.060	+0.353	1.008	-0.123	1.356	-0.915
L α , L δ	+0.01	+0.2	0.00	+0.2	-0.02	+0.2
ω α , ω δ	-0.01	+0.9	0.00	+0.9	+0.03	+0.9
Authority and Catalogue No.	249		A. E. 251		A. E. 256	

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Reticuli.		γ^1 Eridani.		γ^1 Tauri.	
	3·36	G 5	3·59	B 9	3·86	K 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 04 ^m 13	[°] 62 ['] 38	^h 04 ^m 15	[°] 33 ['] 57	^h 04 ^m 15	[°] 15 ['] 27
Jan. 0·9	31·78 ^s	86·00	10·736 ^s	92·23	41·563 ^s	18·88
10·9	31·49 ²⁹	88·36 ²³⁶	10·643 ⁹³	94·29 ²⁰⁶	41·532 ³¹	18·68 ²⁰
20·8	31·14 ³⁵	90·25 ¹⁸⁹	10·510 ¹³³	96·01 ¹⁷²	41·462 ⁷⁰	18·47 ²¹
30·8	30·74 ⁴⁰	91·62 ¹³⁷	10·342 ¹⁶⁸	97·34 ¹³³	41·358 ¹⁰⁴	18·26 ²¹
Feb. 9·8	30·30 ⁴⁴	92·43 ⁸¹	10·146 ¹⁹⁶	98·24 ⁹⁰	41·225 ¹³³	18·04 ²²
19·8	29·83 ⁴⁷	92·68 ²⁵	09·930 ²¹⁶	98·68 ⁴⁴	41·069 ¹⁵⁶	17·82 ²²
29·7	29·35 ⁴⁸	92·36 ³²	09·702 ²²⁸	98·67 ¹	40·900 ¹⁶⁹	17·59 ²³
Mar. 10·7	28·87 ⁴⁸	91·49 ⁸⁷	09·475 ²²⁷	98·21 ⁴⁶	40·730 ¹⁷⁰	17·38 ²¹
20·7	28·41 ⁴⁶	90·09 ¹⁴⁰	09·258 ²¹⁷	97·31 ⁹⁰	40·569 ¹⁶¹	17·19 ¹⁹
30·7	27·99 ⁴²	88·20 ¹⁸⁹	09·060 ¹⁹⁸	96·00 ¹³¹	40·427 ¹⁴²	17·04 ¹⁵
Apr. 9·6	27·62 ³⁷	85·87 ²³³	08·891 ¹⁶⁹	94·29 ¹⁷¹	40·312 ¹¹⁵	16·96 ⁸
19·6	27·31 ³¹	83·15 ²⁷²	08·759 ¹³²	92·21 ²⁰⁸	40·233 ⁷⁹	16·97 ¹
29·6	27·07 ²⁴	80·10 ³⁰⁵	08·671 ⁸⁸	89·83 ²³⁸	40·196 ³⁷	17·09 ¹²
May 9·5	26·90 ¹⁷	76·77 ³³³	08·630 ⁴¹	87·18 ²⁶⁵	40·204 ⁸	17·34 ²⁵
19·5	26·82 ⁸	73·25 ³⁵²	08·640 ¹⁰	84·31 ²⁸⁷	40·259 ⁵⁵	17·74 ⁴⁰
29·5	26·82	69·62 ³⁶³	08·701 ⁶¹	81·29 ³⁰²	40·361 ¹⁰²	18·29 ⁵⁵
June 8·5	26·91 ⁹	65·96 ³⁶⁶	08·812 ¹¹¹	78·19 ³¹⁰	40·508 ¹⁴⁷	18·99 ⁷⁰
18·4	27·08 ¹⁷	62·36 ³⁶⁰	08·971 ¹⁵⁹	75·07 ³¹²	40·696 ¹⁸⁸	19·84 ⁸⁵
28·4	27·33 ²⁵	58·90 ³⁴⁶	09·172 ²⁰¹	72·01 ³⁰⁶	40·920 ²²⁴	20·81 ⁹⁷
July 8·4	27·65 ³²	55·67 ³²³	09·412 ²⁴⁰	69·10 ²⁹¹	41·173 ²⁵³	21·88 ¹⁰⁷
18·4	28·03 ³⁸	52·77 ²⁹⁰	09·684 ²⁷²	66·41 ²⁶⁹	41·451 ²⁷⁸	23·02 ¹¹⁴
28·3	28·46 ⁴³	50·28 ²⁴⁹	09·981 ²⁹⁷	64·01 ²⁴⁰	41·747 ²⁹⁶	24·19 ¹¹⁷
Aug. 7·3	28·94 ⁴⁸	48·27 ²⁰¹	10·296 ³¹⁵	61·99 ²⁰²	42·055 ³⁰⁸	25·36 ¹¹⁷
17·3	29·45 ⁵¹	46·79 ¹⁴⁸	10·622 ³²⁶	60·40 ¹⁵⁹	42·368 ³¹³	26·50 ¹¹⁴
27·2	29·97 ⁵²	45·92 ⁸⁷	10·952 ³³⁰	59·30 ¹¹⁰	42·681 ³¹³	27·56 ¹⁰⁶
Sept. 6·2	30·49 ⁵²	45·66 ²⁶	11·279 ³²⁷	58·72 ⁵⁸	42·991 ³¹⁰	28·51 ⁹⁵
16·2	30·99 ⁵⁰	46·04 ³⁸	11·596 ³¹⁷	58·68 ⁴	43·291 ³⁰⁰	29·34 ⁸³
26·2	31·47 ⁴⁸	47·05 ¹⁰¹	11·899 ³⁰³	59·18 ⁵⁰	43·578 ²⁸⁷	30·02 ⁶⁸
Oct. 6·1	31·91 ⁴⁴	48·66 ¹⁶¹	12·181 ²⁸²	60·21 ¹⁰³	43·850 ²⁷²	30·55 ⁵³
16·1	32·30 ³⁹	50·80 ²¹⁴	12·437 ²⁵⁶	61·72 ¹⁵¹	44·104 ²⁵⁴	30·93 ³⁸
26·1	32·62 ³²	53·39 ²⁵⁹	12·663 ²²⁶	63·64 ¹⁹²	44·336 ²³²	31·17 ²⁴
Nov. 5·1	32·87 ²⁵	56·35 ²⁹⁶	12·855 ¹⁹²	65·90 ²²⁶	44·544 ²⁰⁸	31·28 ¹¹
15·0	33·05 ¹⁸	59·55 ³²⁰	13·009 ¹⁵⁴	68·42 ²⁵²	44·724 ¹⁸⁰	31·29 ¹
25·0	33·14 ⁹	62·88 ³³³	13·122 ¹¹³	71·10 ²⁶⁸	44·873 ¹⁴⁹	31·22 ⁷
Dec. 5·0	33·14 ⁸	66·20 ³³²	13·193 ⁷¹	73·81 ²⁷¹	44·988 ¹¹⁵	31·09 ¹³
14·9	33·06	69·40 ³²⁰	13·219 ²⁶	76·47 ²⁶⁶	45·065 ⁷⁷	30·92 ¹⁷
24·9	32·89 ¹⁷	72·36 ²⁹⁶	13·199 ²⁰	78·98 ²⁵¹	45·103 ³⁸	30·73 ¹⁹
34·9	32·65 ²⁴	74·96 ²⁶⁰	13·135 ⁶⁴	81·24 ²²⁶	45·101 ²	30·53 ²⁰
Mean Place	29·519	73·38	10·098	83·11	41·526	18·56
Sec δ , Tan δ	2·177	-1·934	1·206	-0·674	1·038	+0·276
L α , L δ	-0·05	+0·2	-0·02	+0·2	+0·01	+0·2
ω α , ω δ	+0·06	+0·9	+0·02	+0·9	-0·01	+0·9
Authority and Catalogue No.	A. E.	259	A. E.	261	A. N.	262

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ϵ Tauri.		α Tauri.		α Doradus.	
	3.63	K 0	1.06	K 5	3.47	A 0 p
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 04 ^m 24	[°] 19 ['] 01	^h 04 ^m 31	[°] 16 ['] 21	^h 04 ^m 32	[°] 55 ['] 11
Jan. 0.9	24.574 ^s	20.83 ["]	47.249 ^s	57.97 ["]	27.949 ^s	45.86 ["]
10.9	24.550 ²⁴	20.81 ²	47.231 ¹⁸	57.81 ¹⁶	27.764 ¹⁸⁵	48.40 ²⁵⁴
20.9	24.485 ⁶⁵	20.76 ⁵	47.172 ⁵⁹	57.65 ¹⁶	27.523 ²⁴¹	50.52 ²¹²
30.8	24.383 ¹⁰²	20.68 ⁸	47.076 ⁹⁶	57.49 ¹⁶	27.232 ²⁹¹	52.16 ¹⁶⁴
Feb. 9.8	24.250 ¹³³	20.57 ¹¹	46.947 ¹²⁹	57.32 ¹⁷	26.901 ³³¹	53.29 ¹¹³
19.8	24.093 ¹⁵⁷	20.42 ¹⁵	46.794 ¹⁵³	57.15 ¹⁷	26.542 ³⁵⁹	53.87 ⁵⁸
29.7	23.922 ¹⁷¹	20.23 ¹⁹	46.625 ¹⁶⁹	56.97 ¹⁸	26.168 ³⁷⁴	53.90 ³
Mar. 10.7	23.747 ¹⁷⁵	20.01 ²²	46.452 ¹⁷³	56.79 ¹⁸	25.792 ³⁷⁶	53.38 ⁵²
20.7	23.579 ¹⁶⁸	19.77 ²⁴	46.285 ¹⁶⁷	56.62 ¹⁷	25.426 ³⁶⁶	52.34 ¹⁰⁴
30.7	23.430 ¹⁴⁹	19.55 ²²	46.133 ¹⁵²	56.48 ¹⁴	25.084 ³⁴²	50.80 ¹⁵⁴
Apr. 9.6	23.307 ¹²³	19.35 ²⁰	46.007 ¹²⁶	56.39 ⁹	24.779 ³⁰⁵	48.80 ²⁰⁰
19.6	23.220 ⁸⁷	19.20 ¹⁵	45.916 ⁹¹	56.37 ²	24.520 ²⁵⁹	46.38 ²⁴²
29.6	23.175 ⁴⁵	19.14 ⁶	45.865 ⁵¹	56.44 ⁷	24.316 ²⁰⁴	43.60 ²⁷⁸
May 9.6	23.176 ¹	19.19 ⁵	45.859 ⁶	56.62 ¹⁸	24.174 ¹⁴²	40.52 ³⁰⁸
19.5	23.224 ⁴⁸	19.36 ¹⁷	45.899 ⁴⁰	56.94 ³²	24.099 ⁷⁵	37.20 ³³²
29.5	23.321 ⁹⁷	19.68 ³²	45.986 ⁸⁷	57.39 ⁴⁵	24.093 ⁶	33.72 ³⁴⁸
June 8.5	23.463 ¹⁴²	20.14 ⁴⁶	46.119 ¹³³	57.98 ⁵⁹	24.157 ⁶⁴	30.16 ³⁵⁶
18.4	23.647 ¹⁸⁴	20.74 ⁶⁰	46.294 ¹⁷⁵	58.70 ⁷²	24.289 ¹³²	26.60 ³⁵⁶
28.4	23.868 ²²¹	21.48 ⁷⁴	46.505 ²¹¹	59.55 ⁸⁵	24.486 ¹⁹⁷	23.13 ³⁴⁷
July 8.4	24.120 ²⁵²	22.33 ⁸⁵	46.748 ²⁴³	60.49 ⁹⁴	24.742 ²⁵⁶	19.85 ³²⁸
18.4	24.399 ²⁷⁹	23.27 ⁹⁴	47.018 ²⁷⁰	61.50 ¹⁰¹	25.050 ³⁰⁸	16.84 ³⁰¹
28.3	24.697 ²⁹⁸	24.27 ¹⁰⁰	47.308 ²⁹⁰	62.55 ¹⁰⁵	25.403 ³⁵³	14.19 ²⁶⁵
Aug. 7.3	25.008 ³¹¹	25.30 ¹⁰³	47.611 ³⁰³	63.61 ¹⁰⁶	25.791 ³⁸⁸	11.97 ²²²
17.3	25.326 ³¹⁸	26.32 ¹⁰²	47.923 ³¹²	64.64 ¹⁰³	26.205 ⁴¹⁴	10.26 ¹⁷¹
27.3	25.646 ³²⁰	27.31 ⁹⁹	48.237 ³¹⁴	65.60 ⁹⁶	26.635 ⁴³⁰	09.12 ¹¹⁴
Sept. 6.2	25.962 ³¹⁶	28.23 ⁹²	48.549 ³¹²	66.46 ⁸⁶	27.068 ⁴³³	08.58 ⁵⁴
16.2	26.270 ³⁰⁸	29.05 ⁸²	48.855 ³⁰⁶	67.21 ⁷⁵	27.496 ⁴²⁸	08.67 ⁹
26.2	26.568 ²⁹⁸	29.76 ⁷¹	49.151 ²⁹⁶	67.83 ⁶²	27.907 ⁴¹¹	09.39 ⁷²
Oct. 6.1	26.851 ²⁸³	30.36 ⁶⁰	49.433 ²⁸²	68.30 ⁴⁷	28.291 ³⁸⁴	10.71 ¹³²
16.1	27.116 ²⁶⁵	30.84 ⁴⁸	49.699 ²⁶⁶	68.63 ³³	28.639 ³⁴⁸	12.59 ¹⁸⁸
26.1	27.360 ²⁴⁴	31.21 ³⁷	49.945 ²⁴⁶	68.82 ¹⁹	28.943 ³⁰⁴	14.96 ²³⁷
Nov. 5.1	27.580 ²²⁰	31.47 ²⁶	50.168 ²²³	68.91 ⁹	29.194 ²⁵¹	17.74 ²⁷⁸
15.0	27.773 ¹⁹³	31.65 ¹⁸	50.365 ¹⁹⁷	68.70 ¹	29.385 ¹⁹¹	20.81 ³⁰⁷
25.0	27.935 ¹⁶²	31.76 ¹¹	50.531 ¹⁶⁶	68.82 ⁸	29.512 ¹²⁷	24.06 ³²⁵
Dec. 5.0	28.061 ¹²⁶	31.83 ⁷	50.663 ¹³²	68.69 ¹³	29.572 ⁶⁰	27.36 ³³⁰
15.0	28.150 ⁸⁹	31.86 ³	50.757 ⁹⁴	68.54 ¹⁵	29.563 ⁹	30.60 ³²⁴
24.9	28.198 ⁴⁸	31.87 ¹	50.811 ⁵⁴	68.37 ¹⁷	29.485 ⁷⁸	33.65 ³⁰⁵
34.9	28.204 ⁶	31.86 ¹	50.823 ¹²	68.21 ¹⁶	29.341 ¹⁴⁴	36.42 ²⁷⁷
Mean Place	24.515	19.76	47.162	57.35	26.260	35.59
Sec δ , Tan δ	1.058	+0.345	1.042	+0.294	1.752	-1.438
L α , L δ	+0.01	+0.2	+0.01	+0.2	-0.03	+0.1
ω α , ω δ	-0.01	+0.9	-0.01	+0.9	+0.03	+0.9
Authority and Catalogue No.	A. E.	270	A. E.	278	A. E.	279

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	55 Eridani. 3·98 Ko		τ Tauri. 4·33 B 5		μ Eridani. 4·18 B 5	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
Mean Solar Date.	^h 04 34	^m 14 26	^h 04 37	^m 22 49	^h 04 41	^m 3 22
Jan 0·9	53·231 ³⁷	41·57 ¹⁶⁰	55·287 ¹²	14·91 ¹⁸	54·231 ¹⁹	70·04 ¹¹⁴
10·9	53·194 ⁷⁶	43·17 ¹³⁸	55·275 ⁵⁷	15·09 ¹⁴	54·212 ⁵⁹	71·18 ¹⁰⁰
20·9	53·118 ¹¹¹	44·55 ¹¹²	55·218 ⁹⁷	15·23 ⁹	54·153 ⁹⁵	72·18 ⁸³
30·8	53·007	45·67	55·121	15·32	54·058	73·01
Feb. 9·8	52·866 ¹⁴¹	46·51 ⁸⁴	54·989 ¹³²	15·35 ³	53·932 ¹²⁶	73·66 ⁶⁵
19·8	52·702 ¹⁶⁴	47·05 ⁵⁴	54·831 ¹⁵⁸	15·31 ⁴	53·782 ¹⁵⁰	74·11 ⁴⁵
29·8	52·523 ¹⁷⁹	47·29 ²⁴	54·656 ¹⁷⁵	15·19 ¹²	53·615 ¹⁶⁷	74·36 ²⁵
Mar. 10·7	52·339 ¹⁸⁴	47·22 ⁷	54·474 ¹⁸²	15·01 ¹⁸	53·442 ¹⁷³	74·40 ⁴
20·7	52·160 ¹⁷⁹	46·85 ³⁷	54·298 ¹⁷⁶	14·76 ²⁵	53·273 ¹⁶⁹	74·24 ¹⁶
30·7	51·996 ¹⁶⁴	46·17 ⁶⁸	54·138 ¹⁶⁰	14·47 ²⁹	53·118 ¹⁵⁵	73·86 ³⁸
Apr. 9·6	51·856 ¹⁴⁰	45·20 ⁹⁷	54·004 ¹³⁴	14·18 ²⁹	52·985 ¹³³	73·27 ⁵⁹
19·6	51·747 ¹⁰⁹	43·95 ¹²⁵	53·904 ¹⁰⁰	13·90 ²⁸	52·883 ¹⁰²	72·47 ⁸⁰
29·6	51·676 ⁷¹	42·43 ¹⁵²	53·846 ⁵⁸	13·66 ²⁴	52·817 ⁶⁶	71·46 ¹⁰¹
May 9·6	51·647 ²⁹	40·67 ¹⁷⁶	53·835 ¹¹	13·50 ¹⁶	52·794 ²³	70·25 ¹²¹
19·5	51·663 ¹⁶	38·71 ¹⁹⁶	53·872 ³⁷	13·44 ⁶	52·813 ¹⁹	68·86 ¹³⁹
29·5	51·724 ⁶¹	36·56 ²¹⁵	53·957 ⁸⁵	13·50 ⁶	52·877 ⁶⁴	67·30 ¹⁵⁶
June 8·5	51·829 ¹⁰⁵	34·30 ²²⁶	54·089 ¹³²	13·70 ²⁰	52·985 ¹⁰⁸	65·61 ¹⁶⁹
18·5	51·976 ¹⁴⁷	31·95 ²³⁵	54·265 ¹⁷⁶	14·03 ³³	53·133 ¹⁴⁸	63·82 ¹⁷⁹
28·4	52·160 ¹⁸⁴	29·59 ²³⁶	54·481 ²¹⁶	14·49 ⁴⁶	53·318 ¹⁸⁵	61·97 ¹⁸⁵
July 8·4	52·378 ²¹⁸	27·27 ²³²	54·730 ²⁴⁹	15·09 ⁶⁰	53·533 ²¹⁵	60·12 ¹⁸⁵
18·4	52·623 ²⁴⁵	25·05 ²²²	55·007 ²⁷⁷	15·78 ⁶⁹	53·777 ²⁴⁴	58·30 ¹⁸²
28·3	52·890 ²⁶⁷	23·00 ²⁰⁵	55·305 ²⁹⁸	16·56 ⁷⁸	54·041 ²⁶⁴	56·59 ¹⁷¹
Aug. 7·3	53·173 ²⁸³	21·18 ¹⁸²	55·618 ³¹³	17·39 ⁸³	54·321 ²⁸⁰	55·02 ¹⁵⁷
17·3	53·466 ²⁹³	19·65 ¹⁵³	55·940 ³²²	18·24 ⁸⁵	54·611 ²⁹⁰	53·65 ¹³⁷
27·3	53·764 ²⁹⁸	18·46 ¹¹⁹	56·266 ³²⁶	19·10 ⁸⁶	54·906 ²⁹⁵	52·54 ¹¹¹
Sept. 6·2	54·061 ²⁹⁷	17·65 ⁸¹	56·591 ³²⁵	19·92 ⁸²	55·201 ²⁹⁵	51·70 ⁸⁴
16·2	54·353 ²⁹²	17·25 ⁴⁰	56·911 ³²⁰	20·69 ⁷⁷	55·491 ²⁹⁰	51·17 ⁵³
26·2	54·635 ²⁸²	17·27 ²	57·221 ³¹⁰	21·39 ⁷⁰	55·773 ²⁸²	50·97 ²⁰
Oct. 6·2	54·903 ²⁶⁸	17·69 ⁴²	57·518 ²⁹⁷	22·01 ⁶²	56·043 ²⁷⁰	51·09 ¹²
16·1	55·153 ²⁵⁰	18·51 ⁸²	57·799 ²⁸¹	22·55 ⁵⁴	56·298 ²⁵⁵	51·52 ⁴³
26·1	55·382 ²²⁹	19·68 ¹¹⁷	58·061 ²⁶²	23·01 ⁴⁶	56·535 ²³⁷	52·23 ⁷¹
Nov. 5·1	55·587 ²⁰⁵	21·15 ¹⁴⁷	58·300 ²³⁹	23·40 ³⁹	56·748 ²¹³	53·18 ⁹⁵
15·0	55·763 ¹⁷⁶	22·85 ¹⁷⁰	58·512 ²¹²	23·74 ³⁴	56·936 ¹⁸⁸	54·32 ¹¹⁴
25·0	55·908 ¹⁴⁵	24·70 ¹⁸⁵	58·692 ¹⁸⁰	24·04 ³⁰	57·095 ¹⁵⁹	55·59 ¹²⁷
Dec. 5·0	56·018 ¹¹⁰	26·62 ¹⁹²	58·837 ¹⁴⁵	24·30 ²⁶	57·220 ¹²⁵	56·94 ¹³⁵
15·0	56·089 ⁷¹	28·55 ¹⁹³	58·942 ¹⁰⁵	24·54 ²⁴	57·309 ⁸⁹	58·29 ¹³⁵
24·9	56·121 ³²	30·40 ¹⁸⁵	59·004 ⁶²	24·76 ²²	57·359 ⁵⁰	59·60 ¹³¹
34·9	56·112 ⁹	32·11 ¹⁷¹	59·023 ¹⁹	24·96 ²⁰	57·368 ⁹	60·83 ¹²³
Mean Place	52·902	36·81	55·187	13·14	54·006	67·41
Sec δ, Tan δ	1·033	—0·258	1·085	+0·421	1·002	—0·059
L α, L δ	—0·01	+0·1	+0·01	+0·1	0·00	+0·1
ω α, ω δ	+0·01	+0·9	—0·01	+0·9	0·00	+0·9
Authority and Catalogue No.	A. E.	282	A. E.	284	A. N.	288

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	π^3 Orionis.		ι Aurigæ.		ϵ Aurigæ.	
	3 31	F 8	2 90	K 2	Var.	F 5 p
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 04 45	^m 6 50	^h 04 52	^m 33 03	^h 04 56	^m 43 43
Jan. 0 9	55 913 ^s	12 19	18 197 ^s	16 66	48 126 ^s	11 45
10 9	55 905 ⁸	11 53 ⁶⁶	18 194 ³	17 41 ⁷⁵	48 120 ⁶	12 79 ¹³⁴
20 9	55 856 ⁴⁹	10 95 ⁵⁸	18 141 ⁵³	18 07 ⁶⁶	48 055 ⁶⁵	13 98 ¹¹⁹
30 8	55 769 ⁸⁷	10 46 ⁴⁹	18 042 ⁹⁹	18 62 ⁵⁵	47 935 ¹²⁰	14 98 ¹⁰⁰
Feb. 9 8	55 649 ¹²⁰	10 06 ⁴⁰	17 902 ¹⁴⁰	19 02 ⁴⁰	47 769 ¹⁶⁶	15 75 ⁷⁷
19 8	55 503 ¹⁴⁶	09 76 ³⁰	17 731 ¹⁷¹	19 25 ²³	47 565 ²⁰⁴	16 26 ⁵¹
29 8	55 341 ¹⁶²	09 56 ²⁰	17 538 ¹⁹³	19 31 ⁶	47 336 ²²⁹	16 48 ²²
Mar. 10 7	55 171 ¹⁷⁰	09 46 ¹⁰	17 336 ²⁰²	19 19 ¹²	47 096 ²⁴⁰	16 42 ⁶
20 7	55 005 ¹⁶⁶	09 47 ¹	17 136 ²⁰⁰	18 90 ²⁹	46 859 ²³⁷	16 07 ³⁵
30 7	54 851 ¹⁵⁴	09 59 ¹²	16 952 ¹⁸⁴	18 46 ⁴⁴	46 638 ²²¹	15 47 ⁶⁰
Apr. 9 7	54 721 ¹³⁰	09 83 ²⁴	16 794 ¹⁵⁸	17 91 ⁵⁵	46 447 ¹⁹¹	14 65 ⁸²
19 6	54 621 ¹⁰⁰	10 22 ³⁹	16 673 ¹²¹	17 27 ⁶⁴	46 298 ¹⁴⁹	13 65 ¹⁰⁰
29 6	54 559 ⁶²	10 76 ⁵⁴	16 595 ⁷⁸	16 59 ⁶⁸	46 198 ¹⁰⁰	12 53 ¹¹²
May 9 6	54 539 ²⁰	11 44 ⁶⁸	16 566 ²⁹	15 91 ⁶⁸	46 154 ⁴⁴	11 34 ¹¹⁹
19 5	54 563 ²⁴	12 27 ⁸³	16 590 ²⁴	15 27 ⁶⁴	46 170 ¹⁶	10 15 ¹¹⁹
29 5	54 632 ⁶⁹	13 25 ⁹⁸	16 667 ⁷⁷	14 71 ⁵⁶	46 246 ⁷⁶	08 99 ¹¹⁶
June 8 5	54 744 ¹¹²	14 36 ¹¹¹	16 795 ¹²⁸	14 25 ⁴⁶	46 381 ¹³⁵	07 93 ¹⁰⁶
18 5	54 897 ¹⁵³	15 59 ¹²³	16 971 ¹⁷⁶	13 93 ³²	46 572 ¹⁹¹	06 98 ⁹⁵
28 4	55 088 ¹⁹¹	16 90 ¹³¹	17 191 ²²⁰	13 75 ¹⁸	46 813 ²⁴¹	06 18 ⁸⁰
July 8 4	55 310 ²²²	18 26 ¹³⁶	17 450 ²⁵⁹	13 72 ³	47 100 ²⁸⁷	05 57 ⁶¹
18 4	55 559 ²⁴⁹	19 63 ¹³⁷	17 741 ²⁹¹	13 84 ¹²	47 424 ³²⁴	05 15 ⁴²
28 4	55 830 ²⁷¹	20 98 ¹³⁵	18 057 ³¹⁶	14 09 ²⁵	47 778 ³⁵⁴	04 92 ²³
Aug. 7 3	56 116 ²⁸⁶	22 26 ¹²⁸	18 391 ³³⁴	14 47 ³⁸	48 156 ³⁷⁸	04 89 ³
17 3	56 411 ²⁹⁵	23 42 ¹¹⁶	18 738 ³⁴⁷	14 96 ⁴⁹	48 548 ³⁹²	05 05 ¹⁶
27 3	56 712 ³⁰¹	24 42 ¹⁰⁰	19 092 ³⁵⁴	15 54 ⁵⁸	48 951 ⁴⁰³	05 40 ³⁵
Sept. 6 2	57 013 ³⁰¹	25 24 ⁸²	19 447 ³⁵⁵	16 19 ⁶⁵	49 357 ⁴⁰⁶	05 91 ⁵¹
16 2	57 310 ²⁹⁷	25 85 ⁶¹	19 799 ³⁵²	16 89 ⁷⁰	49 761 ⁴⁰⁴	06 58 ⁶⁷
26 2	57 599 ²⁸⁹	26 22 ³⁷	20 144 ³⁴⁵	17 63 ⁷⁴	50 157 ³⁹⁶	07 39 ⁸¹
Oct. 6 2	57 878 ²⁷⁹	26 37 ¹⁵	20 478 ³³⁴	18 39 ⁷⁶	50 542 ³⁸⁵	08 33 ⁹⁴
16 1	58 143 ²⁶⁵	26 29 ⁸	20 796 ³¹⁸	19 17 ⁷⁸	50 910 ³⁶⁸	09 39 ¹⁰⁶
26 1	58 389 ²⁴⁶	26 01 ²⁸	21 095 ²⁹⁹	19 97 ⁸⁰	51 255 ³⁴⁵	10 56 ¹¹⁷
Nov. 5 1	58 613 ²²⁴	25 56 ⁴⁵	21 370 ²⁷⁵	20 78 ⁸¹	51 574 ³¹⁹	11 82 ¹²⁶
15 1	58 814 ²⁰¹	24 95 ⁶¹	21 617 ²⁴⁷	21 61 ⁸³	51 859 ²⁸⁵	13 17 ¹³⁵
25 0	58 986 ¹⁷²	24 26 ⁶⁹	21 829 ²¹²	22 45 ⁸⁴	52 104 ²⁴⁵	14 59 ¹⁴²
Dec. 5 0	59 124 ¹³⁸	23 51 ⁷⁵	22 003 ¹⁷⁴	23 29 ⁸⁴	52 304 ²⁰⁰	16 06 ¹⁴⁷
15 0	59 226 ¹⁰²	22 74 ⁷⁷	22 134 ¹³¹	24 13 ⁸⁴	52 452 ¹⁴⁸	17 54 ¹⁴⁸
24 9	59 288 ⁶²	21 98 ⁷⁶	22 216 ⁸²	24 96 ⁸³	52 545 ⁹³	19 00 ¹⁴⁶
34 9	59 309 ²¹	21 28 ⁷⁰	22 248 ³²	25 74 ⁷⁸	52 580 ³⁵	20 38 ¹³⁸
Mean Place	55 749	13 01	18 026	13 43	47 842	06 91
Sec δ , Tan δ	1 007	+0 120	1 193	+0 651	1 384	+0 956
L α , L δ	0 00	+0 1	+0 02	+0 1	+0 02	+0 1
ω α , ω δ	0 00	+0 9	-0 01	+1 0	-0 02	+1 0
Authority and Catalogue No.	291		A. E. 299		A. E. 301	

APPARENT PLACES OF STARS, 1928.

305

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Aurigæ. 3.28 B 3		ϵ Leporis. 3.29 K 5		β Eridani. 2.92 A 3	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 05 ^m 01	[°] 41 ['] 08	^h 05 ^m 02	[°] 22 ['] 27	^h 05 ^m 04	[°] 5 ['] 10
Jan. 0.9	27.934 ^s	23.93 ["]	25.223 ^s	64.35 ["]	18.795 ^s	43.84 ["]
10.9	27.935 ¹	25.13 ¹²⁰	25.196 ²⁷	66.40 ²⁰⁵	18.792 ³	45.15 ¹³¹
20.9	27.880 ⁵⁵	26.21 ¹⁰⁸	25.125 ⁷¹	68.20 ¹⁸⁰	18.748 ⁴⁴	46.30 ¹¹⁵
30.9	27.772 ¹⁰⁸	27.13 ⁹²	25.015 ¹¹⁰	69.69 ¹⁴⁹	18.664 ⁸⁴	47.27 ⁹⁷
Feb. 9.8	27.618 ¹⁵⁴	27.85 ⁷²	24.870 ¹⁴⁵	70.85 ¹¹⁶	18.546 ¹¹⁸	48.03 ⁷⁶
19.8	27.427 ¹⁹¹	28.33 ⁴⁸	24.697 ¹⁷³	71.65 ⁸⁰	18.400 ¹⁴⁶	48.57 ⁵⁴
29.8	27.211 ²¹⁶	28.56 ²³	24.505 ¹⁹²	72.08 ⁴³	18.234 ¹⁶⁶	48.89 ³²
Mar. 10.7	26.982 ²²⁹	28.53 ³	24.303 ²⁰²	72.14 ⁶	18.059 ¹⁷⁵	48.99 ¹⁰
20.7	26.755 ²²⁷	28.24 ²⁹	24.102 ²⁰¹	71.82 ³²	17.883 ¹⁷⁶	48.86 ¹³
30.7	26.542 ²¹³	27.72 ⁵²	23.913 ¹⁸⁹	71.13 ⁶⁹	17.718 ¹⁶⁵	48.50 ³⁶
Apr. 9.7	26.358 ¹⁸⁴	26.99 ⁷³	23.743 ¹⁷⁰	70.09 ¹⁰⁴	17.572 ¹⁴⁶	47.92 ⁵⁸
19.6	26.212 ¹⁴⁶	26.11 ⁸⁸	23.602 ¹⁴¹	68.72 ¹³⁷	17.454 ¹¹⁸	47.11 ⁸¹
29.6	26.113 ⁹⁹	25.12 ⁹⁹	23.497 ¹⁰⁵	67.04 ¹⁶⁸	17.370 ⁸⁴	46.09 ¹⁰²
May 9.6	26.068 ⁴⁵	24.06 ¹⁰⁶	23.433 ⁶⁴	65.08 ¹⁹⁶	17.326 ⁴⁴	44.87 ¹²²
19.6	26.079 ¹¹	23.00 ¹⁰⁶	23.413 ²⁰	62.87 ²²¹	17.324 ²	43.46 ¹⁴¹
29.5	26.149 ⁷⁰	21.97 ¹⁰³	23.437 ²⁴	60.47 ²⁴⁰	17.366 ⁴²	41.88 ¹⁵⁸
June 8.5	26.276 ¹²⁷	21.03 ⁹⁴	23.508 ⁷¹	57.93 ²⁵⁴	17.451 ⁸⁵	40.17 ¹⁷¹
18.5	26.456 ¹⁸⁰	20.21 ⁸²	23.623 ¹¹⁵	55.30 ²⁶¹	17.576 ¹²⁵	38.35 ¹⁸²
28.4	26.686 ²³⁰	19.53 ⁶⁸	23.778 ¹⁵⁵	52.64 ²⁶⁶	17.740 ¹⁶⁴	36.47 ¹⁸⁸
July 8.4	26.958 ²⁷²	19.01 ⁵²	23.971 ¹⁹³	50.03 ²⁶¹	17.937 ¹⁹⁷	34.59 ¹⁸⁸
18.4	27.268 ³¹⁰	18.67 ³⁴	24.196 ²²⁵	47.54 ²⁴⁹	18.164 ²²⁷	32.75 ¹⁸⁴
28.4	27.607 ³³⁹	18.51 ¹⁶	24.447 ²⁵¹	45.25 ²²⁹	18.414 ²⁵⁰	31.02 ¹⁷³
Aug. 7.3	27.969 ³⁶²	18.52 ¹	24.720 ²⁷³	43.21 ²⁰⁴	18.683 ²⁶⁹	29.43 ¹⁵⁹
17.3	28.347 ³⁷⁸	18.70 ¹⁸	25.008 ²⁸⁸	41.50 ¹⁷¹	18.964 ²⁸¹	28.04 ¹³⁹
27.3	28.734 ³⁸⁷	19.04 ³⁴	25.306 ²⁹⁸	40.18 ¹³²	19.254 ²⁹⁰	26.92 ¹¹²
Sept. 6.3	29.125 ³⁹¹	19.51 ⁴⁷	25.609 ³⁰³	39.29 ⁸⁹	19.547 ²⁹³	26.09 ⁸³
16.2	29.516 ³⁹¹	20.12 ⁶¹	25.911 ³⁰²	38.87 ⁴²	19.839 ²⁹²	25.58 ⁵¹
26.2	29.900 ³⁸⁴	20.85 ⁷³	26.208 ²⁹⁷	38.93 ⁶	20.126 ²⁸⁷	25.42 ¹⁶
Oct. 6.2	30.273 ³⁷³	21.69 ⁸⁴	26.495 ²⁸⁷	39.47 ⁵⁴	20.405 ²⁷⁹	25.60 ¹⁸
16.1	30.630 ³⁵⁷	22.63 ⁹⁴	26.767 ²⁷²	40.47 ¹⁰⁰	20.672 ²⁶⁷	26.11 ⁵¹
26.1	30.968 ³³⁸	23.65 ¹⁰²	27.020 ²⁵³	41.88 ¹⁴¹	20.922 ²⁵⁰	26.93 ⁸²
Nov. 5.1	31.280 ³¹²	24.76 ¹¹¹	27.249 ²²⁹	43.66 ¹⁷⁸	21.153 ²³¹	28.00 ¹⁰⁷
15.1	31.560 ²⁸⁰	25.95 ¹¹⁹	27.450 ²⁰¹	45.72 ²⁰⁶	21.359 ²⁰⁶	29.28 ¹²⁸
25.0	31.804 ²⁴⁴	27.19 ¹²⁴	27.618 ¹⁶⁸	47.99 ²²⁷	21.537 ¹⁷⁸	30.72 ¹⁴⁴
Dec. 5.0	32.004 ²⁰⁰	28.48 ¹²⁹	27.750 ¹³²	50.36 ²³⁷	21.682 ¹⁴⁵	32.23 ¹⁵¹
15.0	32.156 ¹⁵²	29.80 ¹³²	27.840 ⁹⁰	52.76 ²⁴⁰	21.791 ¹⁰⁹	33.76 ¹⁵³
25.0	32.254 ⁹⁸	31.10 ¹³⁰	27.888 ⁴⁸	55.09 ²³³	21.860 ⁶⁹	35.25 ¹⁴⁹
34.9	32.296 ⁴²	32.34 ¹²⁴	27.892 ⁴	57.27 ²¹⁸	21.886 ²⁶	36.65 ¹⁴⁰
Mean Place	27.667	19.82	24.686	59.95	18.496	41.73
Sec δ , Tan δ	1.328	+0.874	1.082	-0.414	1.004	-0.091
L a , L δ	+0.02	+0.1	-0.01	+0.1	0.00	+0.1
ω a , ω δ	-0.02	+1.0	+0.01	+1.0	0.00	+1.0
Authority and Catalogue No.	A. E.	307	A. E.	308	A. E.	310

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	π^3 Orionis.		ι Aurigæ.		ϵ Aurigæ.	
	3·31	F 8	2·90	K 2	Var.	F 5 ρ
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 04 45	[°] 6 50	^h 04 52	[°] 33 03	^h 04 56	[°] 43 43
Jan. 0·9	55·913 ^s	12·19 ⁶⁶	18·197 ^s	16·66 ⁷⁵	48·126 ^s	11·45 ¹³⁴
10·9	55·905 ⁸	11·53 ⁵⁸	18·194 ³	17·41 ⁶⁶	48·120 ⁶	12·79 ¹¹⁹
20·9	55·856 ⁴⁹	10·95 ⁴⁹	18·141 ⁵³	18·07 ⁵⁵	48·055 ⁶⁵	13·98 ¹⁰⁰
30·8	55·769 ⁸⁷	10·46 ⁴⁰	18·042 ⁹⁹	18·62 ⁴⁰	47·935 ¹²⁰	14·98 ⁷⁷
Feb. 9·8	55·649 ¹²⁰	10·06 ³⁰	17·902 ¹⁴⁰	19·02 ²³	47·769 ¹⁶⁶	15·75 ⁵¹
19·8	55·503 ¹⁴⁶	09·76 ²⁰	17·731 ¹⁷¹	19·25 ⁶	47·565 ²⁰⁴	16·26 ²²
29·8	55·341 ¹⁶²	09·56 ¹⁰	17·538 ¹⁹³	19·31 ¹²	47·336 ²²⁹	16·48 ⁶
Mar. 10·7	55·171 ¹⁷⁰	09·46 ¹	17·336 ²⁰²	19·19 ²⁹	47·096 ²⁴⁰	16·42 ³⁵
20·7	55·005 ¹⁶⁶	09·47 ¹²	17·136 ²⁰⁰	18·90 ⁴⁴	46·859 ²³⁷	16·07 ⁶⁰
30·7	54·851 ¹⁵⁴	09·59 ²⁴	16·952 ¹⁸⁴	18·46 ⁵⁵	46·638 ²²¹	15·47 ⁸²
Apr. 9·7	54·721 ¹³⁰	09·83 ³⁹	16·794 ¹⁵⁸	17·91 ⁶⁴	46·447 ¹⁹¹	14·65 ¹⁰⁰
19·6	54·621 ¹⁰⁰	10·22 ⁵⁴	16·673 ¹²¹	17·27 ⁶⁸	46·298 ¹⁴⁹	13·65 ¹¹²
29·6	54·559 ⁶²	10·76 ⁶⁸	16·595 ⁷⁸	16·59 ⁶⁸	46·198 ¹⁰⁰	12·53 ¹¹⁹
May 9·6	54·539 ²⁰	11·44 ⁸³	16·566 ²⁹	15·91 ⁶⁴	46·154 ⁴⁴	11·34 ¹¹⁹
19·5	54·563 ²⁴	12·27 ⁹⁸	16·590 ²⁴	15·27 ⁵⁶	46·170 ¹⁶	10·15 ¹¹⁶
29·5	54·632 ⁶⁹	13·25 ¹¹¹	16·667 ⁷⁷	14·71 ⁴⁶	46·246 ⁷⁶	08·99 ¹⁰⁶
June 8·5	54·744 ¹¹²	14·36 ¹²³	16·795 ¹²⁸	14·25 ³²	46·381 ¹³⁵	07·93 ⁹⁵
18·5	54·897 ¹⁵³	15·59 ¹³¹	16·971 ¹⁷⁶	13·93 ¹⁸	46·572 ¹⁹¹	06·98 ⁸⁰
28·4	55·088 ¹⁹¹	16·90 ¹³⁶	17·191 ²²⁰	13·75 ³	46·813 ²⁴¹	06·18 ⁶¹
July 8·4	55·310 ²²²	18·26 ¹³⁷	17·450 ²⁵⁹	13·72 ¹²	47·100 ²⁸⁷	05·57 ⁴²
18·4	55·559 ²⁴⁹	19·63 ¹³⁵	17·741 ²⁹¹	13·84 ²⁵	47·424 ³²⁴	05·15 ²³
28·4	55·830 ²⁷¹	20·98 ¹²⁸	18·057 ³¹⁶	14·09 ³⁸	47·778 ³⁵⁴	04·92 ³
Aug. 7·3	56·116 ²⁸⁶	22·26 ¹¹⁶	18·391 ³³⁴	14·47 ⁴⁹	48·156 ³⁷⁸	04·89 ¹⁶
17·3	56·411 ²⁹⁵	23·42 ¹⁰⁰	18·738 ³⁴⁷	14·96 ⁵⁸	48·548 ³⁹²	05·05 ³⁵
27·3	56·712 ³⁰¹	24·42 ⁸²	19·092 ³⁵⁴	15·54 ⁶⁵	48·951 ⁴⁰³	05·40 ⁵¹
Sept. 6·2	57·013 ³⁰¹	25·24 ⁶¹	19·447 ³⁵⁵	16·19 ⁷⁰	49·357 ⁴⁰⁶	05·91 ⁶⁷
16·2	57·310 ²⁹⁷	25·85 ³⁷	19·799 ³⁵²	16·89 ⁷⁴	49·761 ⁴⁰⁴	06·58 ⁸¹
26·2	57·599 ²⁸⁹	26·22 ¹⁵	20·144 ³⁴⁵	17·63 ⁷⁶	50·157 ³⁹⁶	07·39 ⁹⁴
Oct. 6·2	57·878 ²⁷⁹	26·37 ⁸	20·478 ³³⁴	18·39 ⁷⁸	50·542 ³⁸⁵	08·33 ¹⁰⁶
16·1	58·143 ²⁶⁵	26·29 ²⁸	20·796 ³¹⁸	19·17 ⁸⁰	50·910 ³⁶⁸	09·39 ¹¹⁷
26·1	58·389 ²⁴⁶	26·01 ⁴⁵	21·095 ²⁹⁹	19·97 ⁸¹	51·255 ³⁴⁵	10·56 ¹²⁶
Nov. 5·1	58·613 ²²⁴	25·56 ⁶¹	21·370 ²⁷⁵	20·78 ⁸³	51·574 ³¹⁹	11·82 ¹³⁵
15·1	58·814 ²⁰¹	24·95 ⁶⁹	21·617 ²⁴⁷	21·61 ⁸⁴	51·859 ²⁸⁵	13·17 ¹⁴²
25·0	58·986 ¹⁷²	24·26 ⁷⁵	21·829 ²¹²	22·45 ⁸⁴	52·104 ²⁴⁵	14·59 ¹⁴⁷
Dec. 5·0	59·124 ¹³⁸	23·51 ⁷⁷	22·003 ¹⁷⁴	23·29 ⁸⁴	52·304 ²⁰⁰	16·06 ¹⁴⁸
15·0	59·226 ¹⁰²	22·74 ⁷⁶	22·134 ¹³¹	24·13 ⁸³	52·452 ¹⁴⁸	17·54 ¹⁴⁶
24·9	59·288 ⁶²	21·98 ⁷⁰	22·216 ⁸²	24·96 ⁷⁸	52·545 ⁹³	19·00 ¹³⁸
34·9	59·309 ²¹	21·28	22·248 ³²	25·74	52·580 ³⁵	20·38
Mean Place	55·749	13·01	18·026	13·43	47·842	06·91
Sec δ , Tan δ	1·007	+0·120	1·193	+0·651	1·384	+0·956
L a , L δ	0·00	+0·1	+0·02	+0·1	+0·02	+0·1
ω a , ω δ	0·00	+0·9	-0·01	+1·0	-0·02	+1·0
Authority and Catalogue No.	291		A. E. 299		A. E. 301	

APPARENT PLACES OF STARS, 1928.

305

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	η Aurigæ.		ε Leporis.		β Eridani.	
	3.28	B 3	3.29	K 5	2.92	A 3
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 05 ^m 01	[°] 41 ['] 08	^h 05 ^m 02	[°] 22 ['] 27	^h 05 ^m 04	[°] 5 ['] 10
Jan. 0.9	27.934 ^s	23.93 ["]	25.223 ^s	64.35 ["]	18.795 ^s	43.84 ["]
10.9	27.935 ¹	25.13 ¹²⁰	25.196 ²⁷	66.40 ²⁰⁵	18.792 ³	45.15 ¹³¹
20.9	27.880 ⁵⁵	26.21 ¹⁰⁸	25.125 ⁷¹	68.20 ¹⁸⁰	18.748 ⁴⁴	46.30 ¹¹⁵
30.9	27.772 ¹⁰⁸	27.13 ⁹²	25.015 ¹¹⁰	69.69 ¹⁴⁹	18.664 ⁸⁴	47.27 ⁹⁷
Feb. 9.8	27.618 ¹⁵⁴	27.85 ⁷²	24.870 ¹⁴⁵	70.85 ¹¹⁶	18.546 ¹¹⁸	48.03 ⁷⁶
19.8	27.427 ¹⁹¹	28.33 ⁴⁸	24.697 ¹⁷³	71.65 ⁸⁰	18.400 ¹⁴⁶	48.57 ⁵⁴
29.8	27.211 ²¹⁶	28.56 ²³	24.505 ¹⁹²	72.08 ⁴³	18.234 ¹⁶⁶	48.89 ³²
Mar. 10.7	26.982 ²²⁹	28.53 ³	24.303 ²⁰²	72.14 ⁶	18.059 ¹⁷⁵	48.99 ¹⁰
20.7	26.755 ²²⁷	28.24 ²⁹	24.102 ²⁰¹	71.82 ³²	17.883 ¹⁷⁶	48.86 ¹³
30.7	26.542 ²¹³	27.72 ⁵²	23.913 ¹⁸⁹	71.13 ⁶⁹	17.718 ¹⁶⁵	48.50 ³⁶
Apr. 9.7	26.358 ¹⁸⁴	26.99 ⁷³	23.743 ¹⁷⁰	70.09 ¹⁰⁴	17.572 ¹⁴⁶	47.92 ⁵⁸
19.6	26.212 ¹⁴⁶	26.11 ⁸⁸	23.602 ¹⁴¹	68.72 ¹³⁷	17.454 ¹¹⁸	47.11 ⁸¹
29.6	26.113 ⁹⁹	25.12 ⁹⁹	23.497 ¹⁰⁵	67.04 ¹⁶⁸	17.370 ⁸⁴	46.09 ¹⁰²
May 9.6	26.068 ⁴⁵	24.06 ¹⁰⁶	23.433 ⁶⁴	65.08 ¹⁹⁶	17.326 ⁴⁴	44.87 ¹²²
19.6	26.079 ¹¹	23.00 ¹⁰⁶	23.413 ²⁰	62.87 ²²¹	17.324 ²	43.46 ¹⁴¹
29.5	26.149 ⁷⁰	21.97 ¹⁰³	23.437 ²⁴	60.47 ²⁴⁰	17.366 ⁴²	41.88 ¹⁵⁸
June 8.5	26.276 ¹²⁷	21.03 ⁹⁴	23.508 ⁷¹	57.93 ²⁵⁴	17.451 ⁸⁵	40.17 ¹⁷¹
18.5	26.456 ¹⁸⁰	20.21 ⁸²	23.623 ¹¹⁵	55.30 ²⁶³	17.576 ¹²⁵	38.35 ¹⁸²
28.4	26.686 ²³⁰	19.53 ⁶⁸	23.778 ¹⁵⁵	52.64 ²⁶⁶	17.740 ¹⁶⁴	36.47 ¹⁸⁸
July 8.4	26.958 ²⁷²	19.01 ⁵²	23.971 ¹⁹³	50.03 ²⁶¹	17.937 ¹⁹⁷	34.59 ¹⁸⁸
18.4	27.268 ³¹⁰	18.67 ³⁴	24.196 ²²⁵	47.54 ²⁴⁹	18.164 ²²⁷	32.75 ¹⁸⁴
28.4	27.607 ³³⁹	18.51 ¹⁶	24.447 ²⁵¹	45.25 ²²⁹	18.414 ²³⁰	31.02 ¹⁷³
Aug. 7.3	27.969 ³⁶²	18.52 ¹	24.720 ²⁷³	43.21 ²⁰⁴	18.683 ²⁶⁹	29.43 ¹⁵⁹
17.3	28.347 ³⁷⁸	18.70 ¹⁸	25.008 ²⁸⁸	41.50 ¹⁷¹	18.964 ²⁸¹	28.04 ¹³⁹
27.3	28.734 ³⁸⁷	19.04 ³⁴	25.306 ²⁹⁸	40.18 ¹³²	19.254 ²⁹⁰	26.92 ¹¹²
Sept. 6.3	29.125 ³⁹¹	19.51 ⁴⁷	25.609 ³⁰³	39.29 ⁸⁹	19.547 ²⁹³	26.09 ⁸³
16.2	29.516 ³⁹¹	20.12 ⁶¹	25.911 ³⁰²	38.87 ⁴²	19.839 ²⁹²	25.58 ⁵¹
26.2	29.900 ³⁸⁴	20.85 ⁷³	26.208 ²⁹⁷	38.93 ⁶	20.126 ²⁸⁷	25.42 ¹⁶
Oct. 6.2	30.273 ³⁷³	21.69 ⁸⁴	26.495 ²⁸⁷	39.47 ⁵⁴	20.405 ²⁷⁹	25.60 ¹⁸
16.1	30.630 ³⁵⁷	22.63 ⁹⁴	26.767 ²⁷²	40.47 ¹⁰⁰	20.672 ²⁶⁷	26.11 ⁵¹
26.1	30.968 ³³⁸	23.65 ¹⁰²	27.020 ²⁵³	41.88 ¹⁴¹	20.922 ²⁵⁰	26.93 ⁸²
Nov. 5.1	31.280 ³¹²	24.76 ¹¹¹	27.249 ²²⁹	43.66 ¹⁷⁸	21.153 ²³¹	28.00 ¹⁰⁷
15.1	31.560 ²⁸⁰	25.95 ¹¹⁹	27.450 ²⁰¹	45.72 ²⁰⁶	21.359 ²⁰⁶	29.28 ¹²⁸
25.0	31.804 ²⁴⁴	27.19 ¹²⁴	27.618 ¹⁶⁸	47.99 ²²⁷	21.537 ¹⁷⁸	30.72 ¹⁴⁴
Dec. 5.0	32.004 ²⁰⁰	28.48 ¹²⁹	27.750 ¹³²	50.36 ²³⁷	21.682 ¹⁴⁵	32.23 ¹⁵¹
15.0	32.156 ¹⁵²	29.80 ¹³²	27.840 ⁹⁰	52.76 ²⁴⁰	21.791 ¹⁰⁹	33.76 ¹⁵³
25.0	32.254 ⁹⁸	31.10 ¹³⁰	27.888 ⁴⁸	55.09 ²³³	21.860 ⁶⁹	35.25 ¹⁴⁹
34.9	32.296 ⁴²	32.34 ¹²⁴	27.892 ⁴	57.27 ²¹⁸	21.886 ²⁶	36.65 ¹⁴⁰
Mean Place	27.667	19.82	24.686	59.95	18.496	41.73.
Sec δ , Tan δ	1.328	+0.874	1.082	-0.414	1.004	-0.091
L α , L δ	+0.02	+0.1	-0.01	+0.1	0.00	+0.1
ω α , ω δ	-0.02	+1.0	+0.01	+1.0	0.00	+1.0
Authority and Catalogue No.	A. E.	307	A. E.	308	A. E.	310

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	μ Leporis.		β Orionis.		α Aurigæ.	
	3.30	A o p	o.34	B 8 p	o.21	G o
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 05.09	^m 16.17	^h 05.11	^m 8.16	^h 05.11	^m 45.55
Jan. 0.9	^s 42.139	["] 25.74	^s 04.917	["] 63.13	^s 22.350	["] 40.51
10.9	42.128	27.57	04.918	64.61	22.360	41.98
20.9	42.075	29.19	04.875	65.91	22.307	43.32
30.9	41.980	30.56	04.793	67.01	22.196	44.48
Feb. 9.8	41.850	31.63	04.675	67.88	22.033	45.42
19.8	41.691	32.39	04.528	68.51	21.828	46.09
29.8	41.513	32.83	04.361	68.88	21.594	46.47
Mar. 10.7	41.324	32.94	04.182	69.00	21.344	46.54
20.7	41.134	32.73	04.003	68.86	21.093	46.30
30.7	40.953	32.20	03.833	68.46	20.857	45.78
Apr. 9.7	40.791	31.36	03.681	67.82	20.648	45.01
19.6	40.657	30.21	03.557	66.93	20.479	44.02
29.6	40.557	28.78	03.466	65.81	20.359	42.88
May 9.6	40.496	27.10	03.413	64.47	20.295	41.63
19.6	40.478	25.19	03.403	62.93	20.292	40.33
29.5	40.505	23.09	03.436	61.22	20.351	39.04
June 8.5	40.575	20.84	03.512	59.36	20.471	37.80
18.5	40.687	18.48	03.630	57.40	20.649	36.66
28.4	40.840	16.09	03.786	55.38	20.881	35.66
July 8.4	41.027	13.73	03.976	53.37	21.160	34.82
18.4	41.245	11.46	04.196	51.41	21.480	34.16
28.4	41.490	09.33	04.441	49.56	21.835	33.69
Aug. 7.3	41.755	07.43	04.705	47.88	22.216	33.42
17.3	42.035	05.82	04.982	46.44	22.615	33.34
27.3	42.326	04.54	05.270	45.27	23.028	33.46
Sept. 6.3	42.621	03.65	05.562	44.42	23.448	33.76
16.2	42.917	03.18	05.855	43.92	23.869	34.24
26.2	43.210	03.14	06.144	43.79	24.285	34.89
Oct. 6.2	43.494	03.54	06.425	44.03	24.691	35.69
16.1	43.765	04.36	06.695	44.63	25.083	36.64
26.1	44.019	05.56	06.949	45.56	25.454	37.72
Nov. 5.1	44.253	07.10	07.184	46.78	25.799	38.93
15.1	44.460	08.91	07.395	48.22	26.112	40.26
25.0	44.638	10.90	07.577	49.83	26.384	41.69
Dec. 5.0	44.781	13.00	07.727	51.53	26.610	43.20
15.0	44.885	15.13	07.839	53.25	26.783	44.75
25.0	44.947	17.21	07.912	54.93	26.898	46.31
34.9	44.967	19.16	07.942	56.51	26.951	47.83
Mean Place	41.689	22.48	04.570	60.88	21.986	36.13
See δ , Tan δ	1.042	-0.292	1.011	-0.146	1.438	+1.033
L α , L δ	-0.01	+0.1	0.00	+0.1	+0.03	+0.1
ω α , ω δ	0.00	+1.0	0.00	+1.0	-0.01	+1.0
Authority and Catalogue No.	316		A. E. 318		A. E. 319	

APPARENT PLACES OF STARS, 1928. 307
AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	<i>o</i> Orionis.		<i>η</i> Orionis <i>m.</i>		<i>γ</i> Orionis.	
	4.65	B 3	3.44	B 1	1.70	B 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 05 18	[°] 26'	^h ^m 05 20	[°] 27'	^h ^m 05 21	[°] 17'
Jan. 0.9	05.368 ⁵	69.00 ¹¹¹	51.587 ⁵	45.01 ¹²³	16.287 ⁵	09.01 ⁷⁶
10.9	05.381 ¹³	70.11 ¹¹¹	51.601 ¹⁴	46.24 ¹²³	16.308 ²¹	08.25 ⁷⁶
20.9	05.351 ³⁰	71.08 ⁹⁷	51.572 ²⁹	47.32 ¹⁰⁸	16.285 ²³	07.59 ⁶⁶
30.9	05.279 ⁷²	71.91 ⁸³	51.502 ⁷⁰	48.23 ⁹¹	16.220 ⁶⁵	07.04 ⁵⁵
Feb. 9.8	05.172 ¹⁰⁷	72.57 ⁶⁶	51.394 ¹⁰⁸	48.96 ⁷³	16.117 ¹⁰³	06.60 ⁴⁴
19.8	05.034 ¹³⁸	73.05 ⁴⁸	51.257 ¹³⁷	49.49 ⁵³	15.983 ¹³⁴	06.28 ³²
29.8	04.874 ¹⁶⁰	73.35 ³⁰	51.096 ¹⁶¹	49.83 ³⁷	15.826 ¹⁵⁷	06.07 ²¹
Mar. 10.8	04.701 ¹⁷³	73.48 ¹³	50.924 ¹⁷²	49.96 ¹³	15.655 ¹⁷¹	05.98 ⁹
20.7	04.527 ¹⁷⁴	73.41 ⁷	50.748 ¹⁷⁶	49.90 ⁶	15.482 ¹⁷³	06.00 ²
30.7	04.361 ¹⁶⁶	73.17 ²⁴	50.580 ¹⁶⁸	49.63 ²⁷	15.317 ¹⁶⁵	06.14 ¹⁴
Apr. 9.7	04.212 ¹⁴⁹	72.75 ⁴²	50.429 ¹⁵¹	49.16 ⁴⁷	15.169 ¹⁴⁸	06.40 ²⁶
19.6	04.090 ¹²²	72.13 ⁶²	50.303 ¹²⁶	48.49 ⁶⁷	15.047 ¹²²	06.78 ³⁸
29.6	04.001 ⁸⁹	71.34 ⁷⁹	50.211 ⁹²	47.63 ⁸⁶	14.959 ⁸⁸	07.30 ⁵²
May 9.6	03.950 ⁵¹	70.37 ⁹⁷	50.156 ⁵⁵	46.58 ¹⁰⁵	14.909 ⁵⁰	07.95 ⁶⁵
19.6	03.940 ¹⁰	69.23 ¹¹⁴	50.143 ¹³	45.55 ¹²³	14.901 ⁸	08.75 ⁸⁰
29.5	03.975 ³⁵	67.94 ¹²⁹	50.173 ³⁰	43.96 ¹³⁹	14.937 ³⁶	09.67 ⁹²
June 8.5	04.051 ⁷⁶	66.51 ¹⁴³	50.245 ⁷²	43.43 ¹⁵³	15.016 ⁷⁹	10.71 ¹⁰⁴
18.5	04.169 ¹¹⁸	64.98 ¹⁵³	50.359 ¹¹⁴	40.80 ¹⁶³	15.136 ¹²⁰	11.85 ¹¹⁴
28.5	04.324 ¹⁵⁵	63.38 ¹⁶⁰	50.510 ¹⁵¹	39.11 ¹⁶⁹	15.294 ¹⁵⁸	13.07 ¹²²
July 8.4	04.513 ¹⁸⁹	61.76 ¹⁶²	50.696 ¹⁸⁶	37.39 ¹⁷²	15.486 ¹⁹²	14.33 ¹²⁶
18.4	04.732 ²¹⁹	60.16 ¹⁶⁰	50.912 ²¹⁶	35.70 ¹⁶⁹	15.709 ²²³	15.60 ¹²⁷
28.4	04.976 ²⁴⁴	58.63 ¹⁵³	51.152 ²⁴⁰	34.10 ¹⁶⁰	15.956 ²⁴⁷	16.84 ¹²⁴
Aug. 7.3	05.239 ²⁶³	57.22 ¹⁴¹	51.412 ²⁶⁰	32.63 ¹⁴⁷	16.222 ²⁶⁶	18.01 ¹¹⁷
17.3	05.516 ²⁷⁷	55.97 ¹²⁵	51.687 ²⁷⁵	31.33 ¹³⁰	16.503 ²⁸¹	19.06 ¹⁰⁵
27.3	05.803 ²⁸⁷	54.94 ¹⁰³	51.973 ²⁸⁶	30.27 ¹⁰⁶	16.795 ²⁹²	19.95 ⁸⁹
Sept. 6.3	06.096 ²⁹³	54.16 ⁷⁸	52.264 ²⁹¹	29.47 ⁸⁰	17.091 ²⁹⁶	20.66 ⁷¹
16.2	06.390 ²⁹⁴	53.65 ⁵¹	52.557 ²⁹³	28.97 ⁵⁰	17.389 ²⁹⁸	21.15 ⁴⁹
26.2	06.680 ²⁹⁰	53.45 ²⁰	52.848 ²⁹¹	28.78 ¹⁹	17.685 ²⁹⁶	21.40 ²⁵
Oct. 6.2	06.964 ²⁸⁴	53.55 ¹⁰	53.133 ²⁸⁵	28.93 ¹⁵	17.975 ²⁹⁰	21.41 ¹
16.2	07.239 ²⁷⁵	53.94 ³⁹	53.408 ²⁷⁵	29.38 ⁴⁵	18.256 ²⁸¹	21.20 ²¹
26.1	07.501 ²⁶²	54.61 ⁶⁷	53.670 ²⁶²	30.12 ⁷⁴	18.524 ²⁶⁸	20.77 ⁴³
Nov. 5.1	07.744 ²⁴³	55.50 ⁸⁹	53.913 ²⁴³	31.10 ⁹⁸	18.775 ²⁵¹	20.16 ⁶¹
15.1	07.965 ²²¹	56.58 ¹⁰⁸	54.135 ²²²	32.28 ¹¹⁸	19.004 ²²⁹	19.40 ⁷⁶
25.0	08.160 ¹⁹⁵	57.79 ¹²¹	54.330 ¹⁹⁵	33.61 ¹³³	19.207 ²⁰³	18.55 ⁸⁵
Dec. 5.0	08.322 ¹⁶²	59.08 ¹²⁹	54.494 ¹⁶⁴	35.01 ¹⁴⁰	19.378 ¹⁷¹	17.64 ⁹¹
15.0	08.448 ¹²⁶	60.38 ¹³⁰	54.621 ¹²⁷	36.44 ¹⁴³	19.513 ¹³⁵	16.72 ⁹²
25.0	08.534 ⁸⁶	61.65 ¹²⁷	54.708 ⁸⁷	37.83 ¹³⁹	19.608 ⁹⁵	15.83 ⁸⁹
34.9	08.578 ⁴⁴	62.84 ¹¹⁹	54.752 ⁴⁴	39.14 ¹³¹	19.660 ⁵²	15.01 ⁸²
Mean Place	05.080	67.94	51.280	43.81	16.040	09.22
Sec δ, Tan δ	1.000	-0.008	1.001	-0.043	1.006	+0.110
L α, L δ	0.00	+0.1	0.00	+0.1	0.00	+0.1
ω α, ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0
Authority and Catalogue No.	327		A. N. 328		A. E. 330	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect	β Tauri.		β Leporis.		20 G Pictoris.	
	1.78	B 8	2.96	G o	5.54	G 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 05 ^m 21	[°] 28 ['] 32	^h 05 ^m 25	[°] 20 ['] 48	^h 05 ^m 28	[°] 47 ['] 07
Jan. 0.9	44.499 ^s ₂₉	55.81 ^s ₅₂	10.058 ^s ₄	59.38 ^s ₂₁₀	11.986 ^s ₆₉	47.89 ^s ₂₉₃
10.9	44.528 ^s ₂₁	56.33 ^s ₄₉	10.054 ^s ₄₉	61.48 ^s ₁₈₉	11.917 ^s ₁₂₈	50.82 ^s ₂₆₁
20.9	44.507 ^s ₇₀	56.82 ^s ₄₄	10.005 ^s ₉₂	63.37 ^s ₁₅₉	11.789 ^s ₁₈₂	53.43 ^s ₂₂₃
30.9	44.437 ^s ₁₁₃	57.26 ^s ₃₈	09.913 ^s ₁₃₀	64.96 ^s ₁₂₈	11.607 ^s ₂₂₉	55.66 ^s ₁₇₈
Feb. 9.8	44.324 ^s ₁₄₉	57.64 ^s ₂₈	09.783 ^s ₁₆₁	66.24 ^s ₉₄	11.378 ^s ₂₆₇	57.44 ^s ₁₃₁
19.8	44.175 ^s ₁₇₆	57.92 ^s ₁₆	09.622 ^s ₁₈₄	67.18 ^s ₅₉	11.111 ^s ₂₉₄	58.75 ^s ₈₁
29.8	43.999 ^s ₁₉₀	58.08 ^s ₄	09.438 ^s ₁₉₈	67.77 ^s ₂₂	10.817 ^s ₃₀₉	59.56 ^s ₂₉
Mar. 10.8	43.809 ^s ₁₉₄	58.12 ^s ₈	09.240 ^s ₂₀₀	67.99 ^s ₁₄	10.508 ^s ₃₁₃	59.85 ^s ₂₂
20.7	43.615 ^s ₁₈₄	58.04 ^s ₁₉	09.040 ^s ₁₉₄	67.85 ^s ₅₀	10.195 ^s ₃₀₄	59.63 ^s ₇₃
30.7	43.431 ^s ₁₆₅	57.85 ^s ₂₉	08.846 ^s ₁₇₇	67.35 ^s ₈₄	09.891 ^s ₂₈₄	58.90 ^s ₁₂₂
Apr. 9.7	43.266 ^s ₁₃₄	57.56 ^s ₃₆	08.669 ^s ₁₅₂	66.51 ^s ₁₁₇	09.607 ^s ₂₅₃	57.68 ^s ₁₆₈
19.6	43.132 ^s ₉₆	57.20 ^s ₄₀	08.517 ^s ₁₁₈	65.34 ^s ₁₄₉	09.354 ^s ₂₁₂	56.00 ^s ₂₀₈
29.6	43.036 ^s ₅₂	56.80 ^s ₄₁	08.399 ^s ₈₀	63.85 ^s ₁₇₇	09.142 ^s ₁₆₇	53.92 ^s ₂₄₆
May 9.6	42.984 ^s ₄	56.39 ^s ₃₉	08.319 ^s ₃₈	62.08 ^s ₂₀₃	08.975 ^s ₁₁₄	51.46 ^s ₂₇₈
19.6	42.980 ^s ₄₅	56.00 ^s ₃₃	08.281 ^s ₆	60.05 ^s ₂₂₃	08.861 ^s ₅₈	48.68 ^s ₃₀₃
29.5	43.025 ^s ₉₃	55.67 ^s ₂₆	08.287 ^s ₅₀	57.82 ^s ₂₃₉	08.803 ^s ₁	45.65 ^s ₃₂₃
June 8.5	43.118 ^s ₁₄₇	55.41 ^s ₁₈	08.337 ^s ₉₄	55.43 ^s ₂₄₉	08.802 ^s ₅₇	42.42 ^s ₃₃₃
18.5	43.259 ^s ₁₈₄	55.23 ^s ₇	08.431 ^s ₁₃₄	52.94 ^s ₂₅₆	08.859 ^s ₁₁₃	39.09 ^s ₃₃₅
28.5	43.443 ^s ₂₂₂	55.16 ^s ₄	08.565 ^s ₁₇₂	50.38 ^s ₂₅₃	08.972 ^s ₁₆₆	35.74 ^s ₃₅₉
July 8.4	43.665 ^s ₂₅₅	55.20 ^s ₁₃	08.737 ^s ₂₀₅	47.85 ^s ₂₄₃	09.138 ^s ₂₁₄	32.45 ^s ₃₁₄
18.4	43.920 ^s ₂₈₃	55.33 ^s ₂₃	08.942 ^s ₂₃₃	45.42 ^s ₂₂₇	09.352 ^s ₂₅₈	29.31 ^s ₂₈₉
28.4	44.303 ^s ₃₀₅	55.56 ^s ₃₀	09.175 ^s ₂₅₇	43.15 ^s ₂₀₄	09.610 ^s ₂₉₆	26.42 ^s ₂₅₇
Aug. 7.3	44.508 ^s ₃₂₁	55.86 ^s ₃₅	09.432 ^s ₂₇₆	41.11 ^s ₁₇₄	09.906 ^s ₃₂₆	23.85 ^s ₂₁₄
17.3	44.829 ^s ₃₃₂	56.21 ^s ₄₀	09.708 ^s ₂₈₈	39.37 ^s ₁₃₈	10.232 ^s ₃₅₀	21.71 ^s ₁₆₆
27.3	45.161 ^s ₃₃₈	56.61 ^s ₄₂	09.996 ^s ₂₉₇	37.99 ^s ₉₆	10.582 ^s ₃₆₅	20.05 ^s ₁₁₀
Sept 6.3	45.499 ^s ₃₄₀	57.03 ^s ₄₂	10.293 ^s ₃₀₀	37.03 ^s ₅₁	10.947 ^s ₃₇₄	18.95 ^s ₅₂
16.2	45.839 ^s ₃₃₈	57.45 ^s ₄₂	10.593 ^s ₂₉₈	36.52 ^s ₄	11.321 ^s ₃₇₃	18.43 ^s ₁₀
26.2	46.177 ^s ₃₃₁	57.87 ^s ₄₀	10.891 ^s ₂₉₃	36.48 ^s ₄₃	11.694 ^s ₃₆₄	18.53 ^s ₇₁
Oct. 6.2	46.508 ^s ₃₂₂	58.27 ^s ₃₉	11.184 ^s ₂₈₁	36.91 ^s ₉₀	12.058 ^s ₃₄₈	19.24 ^s ₁₃₃
16.2	46.830 ^s ₃₀₇	58.66 ^s ₃₈	11.465 ^s ₂₆₆	37.81 ^s ₁₃₁	12.406 ^s ₃₂₄	20.57 ^s ₁₈₇
26.1	47.137 ^s ₂₈₉	59.04 ^s ₃₇	11.731 ^s ₂₄₇	39.12 ^s ₁₆₉	12.730 ^s ₂₉₀	22.44 ^s ₂₃₅
Nov. 5.1	47.426 ^s ₂₆₅	59.41 ^s ₃₉	11.978 ^s ₂₂₀	40.81 ^s ₁₉₈	13.020 ^s ₂₅₀	24.79 ^s ₂₇₆
15.1	47.691 ^s ₂₃₅	59.80 ^s ₄₁	12.198 ^s ₁₉₁	42.79 ^s ₂₂₂	13.270 ^s ₂₀₃	27.55 ^s ₃₀₅
25.0	47.926 ^s ₂₀₀	60.21 ^s ₄₃	12.389 ^s ₁₅₆	45.01 ^s ₂₃₄	13.473 ^s ₁₅₁	30.60 ^s ₃₂₂
Dec. 5.0	48.126 ^s ₁₅₉	60.64 ^s ₄₆	12.545 ^s ₁₁₅	47.35 ^s ₂₃₉	13.624 ^s ₉₃	33.82 ^s ₃₃₀
15.0	48.285 ^s ₁₁₃	61.10 ^s ₄₉	12.660 ^s ₇₃	49.74 ^s ₂₃₄	13.717 ^s ₃₂	37.12 ^s ₃₂₅
25.0	48.398 ^s ₆₅	61.59 ^s ₅₁	12.733 ^s ₂₇	52.08 ^s ₂₂₃	13.749 ^s ₃₀	40.37 ^s ₃₀₈
34.9	48.463 ^s	62.10 ^s	12.760 ^s	54.31 ^s	13.719 ^s	43.45 ^s
Mean Place	44.273	53.53	09.503	56.52	10.591	43.35
Sec δ , Tan δ	1.138	+0.544	1.070	-0.380	1.470	-1.077
L α , L δ	+0.01	+0.1	-0.01	+0.1	-0.03	+0.1
ω α , ω δ	-0.01	+1.0	0.00	+1.0	+0.01	+1.0
Authority and Catalogue No.	A. E.	331	A. N.	333		335

APPARENT PLACES OF STARS, 1928.

309

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Orionis.		α Leporis.		ι Orionis.	
	2.48	B o	2.69	F o	2.89	O c 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 05 28	^o ['] 0 20	^h ^m 05 29	^o ['] 17 52	^h ^m 05 31	^o ['] 5 57
Jan. 1.0	19.897 ²³	64.61 ¹¹⁴	33.702 ⁴	23.79 ²⁰⁰	54.932 ²¹	21.94 ¹⁴⁵
10.9	19.920 ²²	65.75 ¹⁰¹	33.706 ⁴¹	25.79 ¹⁷⁹	54.953 ²⁴	23.39 ¹²⁸
20.9	19.898 ⁶⁴	66.76 ⁸⁴	33.665 ⁸³	27.58 ¹⁵²	54.929 ⁶⁶	24.67 ¹⁰⁹
30.9	19.834 ¹⁰²	67.60 ⁶⁸	33.582 ¹²²	29.10 ¹²³	54.863 ¹⁰⁴	25.76 ⁸⁸
Feb. 9.8	19.732 ¹³³	68.28 ⁵⁰	33.460 ¹⁵⁴	30.33 ⁹¹	54.759 ¹³⁶	26.64 ⁶⁵
19.8	19.599 ¹⁵⁷	68.78 ³²	33.306 ¹⁷⁷	31.24 ⁵⁸	54.623 ¹⁶¹	27.29 ⁴²
29.8	19.442 ¹⁷²	69.10 ¹³	33.129 ¹⁹¹	31.82 ²⁴	54.462 ¹⁷⁵	27.71 ¹⁸
Mar. 10.8	19.270 ¹⁷⁵	69.23 ⁴	32.938 ¹⁹⁵	32.06 ¹¹	54.287 ¹⁷⁸	27.89 ⁵
20.7	19.095 ¹⁶⁹	69.19 ²³	32.743 ¹⁸⁹	31.95 ⁴⁴	54.109 ¹⁷³	27.84 ²⁹
30.7	18.926 ¹⁵²	68.96 ⁴⁰	32.554 ¹⁷³	31.51 ⁷⁶	53.936 ¹⁵⁸	27.55 ⁵²
Apr. 9.7	18.774 ¹²⁸	68.56 ⁵⁹	32.381 ¹⁴⁸	30.75 ¹⁰⁸	53.778 ¹³⁴	27.03 ⁷⁵
19.7	18.646 ⁹⁶	67.97 ⁷⁶	32.233 ¹¹⁶	29.67 ¹³⁷	53.644 ¹⁰²	26.28 ⁹⁶
May 29.6	18.550 ⁵⁹	67.21 ⁹⁴	32.117 ⁷⁹	28.30 ¹⁶⁴	53.542 ⁶⁶	25.32 ¹¹⁶
9.6	18.491 ¹⁷	66.27 ¹¹¹	32.038 ³⁷	26.66 ¹⁸⁹	53.476 ²⁵	24.16 ¹³⁶
19.6	18.474 ²⁵	65.16 ¹²⁵	32.001 ⁶	24.77 ²⁰⁹	53.451 ¹⁷	22.80 ¹⁵³
29.5	18.499 ⁶⁷	63.91 ¹³⁹	32.007 ⁴⁹	22.68 ²²⁵	53.468 ⁵⁹	21.27 ¹⁶⁷
June 8.5	18.566 ¹⁰⁸	62.52 ¹⁴⁹	32.056 ⁹²	20.43 ²³⁶	53.527 ¹⁰¹	19.60 ¹⁷⁸
18.5	18.674 ¹⁴⁶	61.03 ¹⁵⁶	32.148 ¹³²	18.07 ²⁴¹	53.628 ¹³⁹	17.82 ¹⁸⁴
28.5	18.820 ¹⁸²	59.47 ¹⁵⁸	32.280 ¹⁶⁹	15.66 ²⁴⁰	53.767 ¹⁷³	15.98 ¹⁸⁵
July 8.4	19.002 ²¹¹	57.89 ¹⁵⁷	32.449 ²⁰²	13.26 ²³²	53.940 ²⁰⁴	14.13 ¹⁸²
18.4	19.213 ²³⁷	56.32 ¹⁵⁰	32.651 ²²⁹	10.94 ²¹⁸	54.144 ²³¹	12.31 ¹⁷³
28.4	19.450 ²⁵⁷	54.82 ¹³⁹	32.880 ²⁵³	08.76 ¹⁹⁶	54.375 ²⁵²	10.58 ¹⁵⁸
Aug. 7.4	19.707 ²⁷³	53.43 ¹²³	33.133 ²⁷¹	06.80 ¹⁷⁰	54.627 ²⁶⁹	09.00 ¹³⁷
17.3	19.980 ²⁸⁴	52.20 ¹⁰¹	33.404 ²⁸⁵	05.10 ¹³⁴	54.896 ²⁸¹	07.63 ¹¹³
Sept. 27.3	20.264 ²⁹¹	51.19 ⁷⁷	33.689 ²⁹³	03.76 ⁹⁶	55.177 ²⁸⁹	06.50 ⁸³
6.3	20.555 ²⁹⁴	50.42 ⁴⁹	33.982 ²⁹⁷	02.80 ⁵²	55.466 ²⁹²	05.67 ⁵⁰
16.2	20.849 ²⁹¹	49.93 ¹⁹	34.279 ²⁹⁶	02.28 ⁸	55.758 ²⁹¹	05.17 ¹⁵
26.2	21.140 ²⁸⁸	49.74 ¹²	34.575 ²⁹¹	02.20 ³⁷	56.049 ²⁸⁷	05.02 ²⁰
Oct. 6.2	21.428 ²⁷⁹	49.86 ⁴¹	34.866 ²⁸²	02.57 ⁸¹	56.336 ²⁸⁰	05.22 ⁵⁵
16.2	21.707 ²⁶⁷	50.27 ⁶⁸	35.148 ²⁶⁷	03.38 ¹²³	56.616 ²⁶⁶	05.77 ⁸⁶
26.1	21.974 ²⁵⁰	50.95 ⁹¹	35.415 ²⁴⁸	04.61 ¹⁵⁸	56.882 ²⁵⁰	06.63 ¹¹⁵
Nov. 5.1	22.224 ²³⁰	51.86 ¹¹⁰	35.663 ²²⁴	06.19 ¹⁸⁷	57.132 ²²⁹	07.78 ¹³⁷
15.1	22.454 ²⁰³	52.96 ¹²⁴	35.887 ¹⁹⁶	08.06 ²⁰⁹	57.361 ²⁰²	09.15 ¹⁵²
25.1	22.657 ¹⁷²	54.20 ¹³²	36.083 ¹⁶¹	10.15 ²²¹	57.563 ¹⁷¹	10.67 ¹⁶³
Dec. 5.0	22.829 ¹³⁶	55.52 ¹³³	36.244 ¹²²	12.36 ²²⁷	57.734 ¹³⁵	12.30 ¹⁶⁶
15.0	22.965 ⁹⁶	56.85 ¹³⁰	36.366 ⁸¹	14.63 ²²³	57.869 ⁹⁵	13.96 ¹⁶³
25.0	23.061 ⁵³	58.15 ¹²²	36.447 ³⁵	16.86 ²¹²	57.964 ⁵¹	15.59 ¹⁵³
34.9	23.114	59.37	36.482	18.98	58.015	17.12
Mean Place	19.593	63.86	33.189	21.43	54.572	20.77
Sec δ , Tan δ	1.000	-0.006	1.051	-0.322	1.005	-0.104
L α , L δ	0.00	+0.1	-0.01	+0.1	0.00	0.0
ω α , ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0
Authority and Catalogue No.	A. E.	336	A. E.	338	A. E.	343

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ϵ Orionis.		β Doradus.		ζ Tauri.	
	$\gamma 75$	B o	$\gamma 81$	F 5 p	$\gamma 60$	B 3 f
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 05 ^m 32	[°] 1 ['] 14	^h 05 ^m 32	[°] 62 ['] 31	^h 05 ^m 33	[°] 21 ['] 06
Jan. 1·0	33·821 ^s	48·34 ["]	62·49 ^s	76·63 ["]	20·617 ^s	02·08 ["]
10·9	33·847 ²⁶	49·55 ¹²¹	62·33 ¹⁶	79·76 ³¹³	20·656 ³⁹	02·15 ⁷
20·9	33·828 ¹⁹	50·61 ¹⁰⁶	62·08 ²⁵	82·56 ²⁸⁰	20·647 ⁹	02·26 ¹¹
30·9	33·766 ⁶²	51·50 ⁸⁹	61·76 ³²	84·96 ²⁴⁰	20·591 ⁵⁶	02·38 ¹²
Feb. 9·8	33·666 ¹⁰⁰	52·22 ⁷²	61·38 ³⁸	86·89 ¹⁹³	20·493 ⁹⁸	02·51 ¹³
19·8	33·534 ¹³²	52·75 ⁵³	60·94 ⁴⁴	88·31 ¹⁴²	20·359 ¹³⁴	02·62 ¹¹
29·8	33·377 ¹⁵⁷	53·09 ³⁴	60·46 ⁴⁸	89·19 ⁸⁸	20·198 ¹⁶¹	02·70 ⁸
Mar. 10·8	33·206 ¹⁷¹	53·25 ¹⁶	59·97 ⁴⁹	89·53 ³⁴	20·021 ¹⁷⁷	02·74 ⁴
20·7	33·031 ¹⁷⁵	53·21 ⁴	59·47 ⁵⁰	89·31 ²²	19·839 ¹⁸²	02·74 [—]
30·7	32·861 ¹⁷⁰	52·98 ²³	58·98 ⁴⁹	88·56 ⁷⁵	19·662 ¹⁷⁷	02·70 ⁴
Apr. 9·7	32·706 ¹⁵⁵	52·56 ⁴²	58·52 ⁴⁶	87·29 ¹²⁷	19·503 ¹⁵⁹	02·63 ⁷
19·7	32·575 ¹³¹	51·96 ⁶⁰	58·10 ⁴²	85·54 ¹⁷⁵	19·371 ¹³²	02·55 ⁸
29·6	32·476 ⁹⁹	51·17 ⁷⁹	57·73 ³⁷	83·34 ²²⁰	19·272 ⁹⁹	02·48 ⁷
May 9·6	32·414 ⁶²	50·20 ⁹⁷	57·42 ³¹	80·75 ²⁵⁹	19·214 ⁵⁸	02·44 ⁴
19·6	32·392 ²²	49·06 ¹¹⁴	57·18 ²⁴	77·82 ²⁹³	19·200 ¹⁴	02·45 ¹
29·5	32·413 ²¹	47·77 ¹²⁹	57·03 ¹⁵	74·62 ³²⁰	19·232 ³²	02·52 ⁷
June 8·5	32·476 ⁶³	46·35 ¹⁴²	56·95 ⁸	71·23 ³³⁹	19·310 ⁷⁸	02·68 ¹⁶
18·5	32·579 ¹⁰³¹	44·83 ¹⁵²	56·96 ¹	67·73 ³⁵⁰	19·433 ¹²³	02·92 ²⁴
28·5	32·721 ¹⁴²	43·24 ¹⁵⁹	57·04 ⁸	64·20 ³⁵³	19·596 ¹⁶³	03·24 ³²
July 8·4	32·898 ¹⁷⁷	41·62 ¹⁶²	57·21 ¹⁷	60·74 ³⁴⁶	19·794 ¹⁹⁸	03·64 ⁴⁰
18·4	33·105 ²⁰⁷	40·02 ¹⁶⁰	57·45 ²⁴	57·44 ³³⁰	20·026 ²³²	04·10 ⁴⁶
28·4	33·337 ²³²	38·49 ¹⁵³	57·76 ³¹	54·40 ³⁰⁴	20·285 ²⁵⁹	04·60 ⁵⁰
Aug. 7·4	33·592 ²⁵⁵	37·08 ¹⁴¹	58·14 ³⁸	51·71 ²⁶⁹	20·566 ²⁸¹	05·13 ⁵³
17·3	33·862 ²⁷⁰	35·84 ¹²⁴	58·57 ⁴³	49·46 ²²⁵	20·863 ²⁹⁷	05·66 ⁵³
27·3	34·144 ²⁸²	34·82 ¹⁰²	59·03 ⁴⁶	47·72 ¹⁷⁴	21·172 ³⁰⁹	06·15 ⁴⁹
Sept. 6·3	34·434 ²⁹⁰	34·05 ⁷⁷	59·52 ⁴⁹	46·55 ¹¹⁷	21·489 ³¹⁷	06·59 ⁴⁴
16·2	34·727 ²⁹³	33·57 ⁴⁸	60·03 ⁵¹	46·01 ⁵⁴	21·809 ³²⁰	06·96 ³⁷
26·2	35·019 ²⁹²	33·38 ¹⁹	60·55 ⁵²	46·10 ⁹	22·129 ³²⁰	07·24 ²⁸
Oct. 6·2	35·308 ²⁸⁹	33·51 ¹³	61·05 ⁵⁰	46·86 ⁷⁶	22·444 ³¹⁵	07·44 ²⁰
16·2	35·588 ²⁸⁰	33·94 ⁴³	61·52 ⁴⁷	48·26 ¹⁴⁰	22·752 ³⁰⁸	07·55 ¹¹
26·1	35·857 ²⁶⁹	34·66 ⁷²	61·96 ⁴⁴	50·23 ¹⁹⁷	23·049 ²⁹⁷	07·58 ³
Nov. 5·1	36·110 ²⁵³	35·62 ⁹⁶	62·35 ³⁹	52·73 ²⁵⁰	23·330 ²⁸¹	07·55 ³
15·1	36·342 ²³²	36·78 ¹¹⁶	62·67 ³²	55·64 ²⁹¹	23·589 ²⁵⁹	07·49 ⁶
25·1	36·548 ²⁰⁶	38·08 ¹³⁰	62·91 ²⁴	58·88 ³²⁴	23·821 ²³²	07·41 ⁸
Dec. 5·0	36·723 ¹⁷⁵	39·45 ¹³⁷	63·07 ¹⁶	62·31 ³⁴³	24·022 ²⁰¹	07·34 ⁷
15·0	36·862 ¹³⁹	40·85 ¹⁴⁰	63·15 ⁸	65·81 ³⁵⁰	24·184 ¹⁶²	07·30 ⁴
25·0	36·962 ¹⁰⁰	42·22 ¹³⁷	63·13 ²	69·27 ³⁴⁶	24·303 ¹¹⁹	07·29 ¹
34·9	37·018 ⁵⁶	43·50 ¹²⁸	63·02 ¹¹	72·57 ³³⁰	24·376 ⁷³	07·33 ⁴
Mean Place	33·503	47·64	59·795	71·99	20·384	00·64
Sec δ , Tan δ	1·000	—0·022	2·168	—1·924	1·072	+0·386
L α , L δ	0·00	0·0	—0·05	0·0	+0·01	0·0
ω α , ω δ	0·00	+1·0	+0·01	+1·0	0·00	+1·0
Authority and Catalogue No.	A. E.	344	A. E.	345	A. E.	346

APPARENT PLACES OF STARS, 1928.

311

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Columbæ.		ζ^1 Orionis.		ι^{30} Tauri.	
	2.75	B 5 p	2.05	B o	5.51	F o
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 05 37	[°] ['] 34 06	^h ^m 05 37	[°] ['] 1 58	^h ^m 05 43	[°] ['] 17 42
Jan. 1.0	^s 03.270 ¹⁹	44.05 ²⁶⁶	^s 07.783 ²⁸	45.92 ¹²⁵	14.426 ⁴⁷	14.02 ¹⁵
10.9	03.251 ⁶⁹	46.71 ²³⁹	07.811 ¹⁶	47.17 ¹¹¹	14.473 ⁴⁷	13.87 ⁸
20.9	03.182 ¹¹⁶	49.10 ²⁰⁶	07.795 ⁵⁹	48.28 ⁹⁵	14.473 ⁴⁷	13.79 ⁴
30.9	03.066 ¹⁵⁹	51.16 ¹⁶⁸	07.736 ⁹⁸	49.23 ⁷⁵	14.426 ⁹⁰	13.75 ¹
Feb. 9.8	02.907 ¹⁹⁵	52.84 ¹²⁶	07.638 ¹³¹	49.98 ⁵⁷	14.336 ¹²⁶	13.76 ²
19.8	02.712 ²²¹	54.10 ⁸²	07.507 ¹⁵⁵	50.55 ³⁷	14.210 ¹⁵⁵	13.78 ⁴
29.8	02.491 ²³⁶	54.92 ³⁷	07.352 ¹⁷²	50.92 ¹⁶	14.055 ¹⁷¹	13.82 ³
Mar. 10.8	02.255 ²⁴²	55.29 ⁹	07.180 ¹⁷⁶	51.08 ³	13.884 ¹⁷⁹	13.85 ⁴
20.7	02.013 ²³⁶	55.20 ⁵⁴	07.004 ¹⁷¹	51.05 ²³	13.705 ¹⁷⁵	13.89 ²
30.7	01.777 ²²⁰	54.66 ⁹⁷	06.833 ¹⁵⁶	50.82 ⁴¹	13.530 ¹⁵⁹	13.91 ³
Apr. 9.7	01.557 ¹⁹⁴	53.69 ¹³⁷	06.677 ¹³⁴	50.41 ⁶²	13.371 ¹³⁶	13.94 ⁵
19.7	01.363 ¹⁶¹	52.32 ¹⁷⁶	06.543 ¹⁰²	49.79 ⁸⁰	13.235 ¹⁰²	13.99 ⁸
29.6	01.202 ¹²¹	50.56 ²¹⁰	06.441 ⁶⁶	48.99 ⁹⁹	13.133 ⁶⁵	14.07 ¹²
May 9.6	01.081 ⁷⁸	48.46 ²⁴⁰	06.375 ²⁶	48.09 ¹¹⁵	13.068 ²²	14.19 ¹⁸
19.6	01.003 ³⁰	46.06 ²⁶⁵	06.349 ¹⁷	46.85 ¹³²	13.046 ²²	14.37 ²⁶
29.5	00.973 ¹⁸	43.41 ²⁸⁴	06.366 ⁵⁸	45.53 ¹⁴⁵	13.068 ⁶⁷	14.63 ³⁴
June 8.5	00.991 ⁶⁶	40.57 ²⁹⁶	06.424 ⁹⁸	44.95 ¹⁵⁵	13.135 ¹¹⁰	14.97 ⁴¹
18.5	01.057 ¹¹³	37.61 ³⁰¹	06.522 ¹³⁷	42.53 ¹⁶²	13.245 ¹⁵⁰	15.38 ⁴⁹
28.5	01.170 ¹⁵⁶	34.60 ²⁹⁸	06.659 ¹⁷²	40.91 ¹⁶⁴	13.395 ¹⁸⁶	15.87 ⁵⁵
July 8.4	01.326 ¹⁹⁵	31.62 ²⁸⁶	06.831 ²⁰³	39.27 ¹⁶²	13.581 ²¹⁸	16.42 ⁵⁹
18.4	01.521 ²³⁰	28.76 ²⁶⁷	07.034 ²²⁹	37.65 ¹⁵⁵	13.799 ²⁴⁶	17.01 ⁶¹
28.4	01.751 ²⁶⁰	26.09 ²³⁹	07.263 ²⁵⁰	36.10 ¹⁴³	14.045 ²⁶⁸	17.62 ⁶¹
Aug. 7.4	02.011 ²⁸⁴	23.70 ²⁰⁴	07.513 ²⁶⁸	34.67 ¹²⁵	14.313 ²⁸⁵	18.23 ⁵⁷
17.3	02.295 ³⁰³	21.66 ¹⁶¹	07.781 ²⁸⁰	33.42 ¹⁰⁴	14.598 ²⁹⁸	18.80 ⁵²
27.3	02.598 ³¹⁶	20.05 ¹¹¹	08.061 ²⁸⁸	32.38 ⁷⁷	14.896 ³⁰⁸	19.32 ⁴³
Sept. 6.3	02.914 ³²²	18.94 ⁵⁹	08.349 ²⁹²	31.61 ⁴⁸	15.204 ³¹³	19.75 ³²
16.2	03.236 ³²⁴	18.35 ⁵	08.641 ²⁹³	31.13 ¹⁷	15.517 ³¹³	20.07 ²⁰
26.2	03.560 ³¹⁹	18.30 ⁵³	08.934 ²⁹⁰	30.96 ¹⁵	15.830 ³¹²	20.27 ⁹
Oct. 6.2	03.879 ³⁰⁸	18.83 ¹⁰⁸	09.224 ²⁸²	31.11 ⁴⁷	16.142 ³⁰⁶	20.36 ⁴
16.2	04.187 ²⁹¹	19.91 ¹⁵⁸	09.506 ²⁷¹	31.58 ⁷⁵	16.448 ²⁹⁵	20.32 ¹⁵
26.1	04.478 ²⁶⁸	21.49 ²⁰⁴	09.777 ²⁵⁶	32.33 ¹⁰⁰	16.743 ²⁸¹	20.17 ²³
Nov. 5.1	04.746 ²³⁹	23.53 ²⁴²	10.033 ²³⁵	33.33 ¹²⁰	17.024 ²⁶²	19.94 ²⁸
15.1	04.985 ²⁰⁴	25.95 ²⁷⁰	10.268 ²¹⁰	34.53 ¹³⁴	17.286 ²³⁵	19.66 ³²
25.1	05.189 ¹⁶²	28.65 ²⁸⁸	10.478 ¹⁷⁹	35.87 ¹⁴²	17.521 ²⁰⁵	19.34 ³¹
Dec. 5.0	05.351 ¹¹⁷	31.53 ²⁹⁵	10.657 ¹⁴³	37.29 ¹⁴⁶	17.726 ¹⁶⁸	19.03 ³⁰
15.0	05.468 ⁶⁸	34.48 ²⁹²	10.800 ¹⁰³	38.75 ¹⁴²	17.894 ¹²⁷	18.73 ²⁴
25.0	05.536 ¹⁶	37.40 ²⁷⁹	10.903 ⁶¹	40.17 ¹³⁴	18.021 ⁸¹	18.49 ¹⁹
34.9	05.552	40.19	10.964	41.51	18.102	18.30
Mean Place	02.380	40.99	07.450	45.30	14.178	12.86
Sec δ , Tan δ	1.208	-0.677	1.001	-0.035	1.050	+0.319
L. α , L. δ	-0.02	0.0	0.00	0.0	+0.01	0.0
ω α , ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0
Authority and Catalogue No.	A. E.	349		350	A. N.	354

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	κ Orionis.		β Columbæ.		α Orionis.	
	2.20	Bo	3.22	Ko	Var.	Ma
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 05 44	^m 9 41	^h 05 48	^m 35 47	^h 05 51	^m 7 23
Jan. 1.0	20.858 ^s	39.31 ["]	26.141 ^s	42.27 ["]	16.642 ^s	42.66 ["]
10.9	20.886 ²⁸	40.99 ¹⁶⁸	26.132 ⁹	45.03 ²⁷⁶	16.691 ⁴⁹	41.89 ⁷⁷
20.9	20.869 ¹⁷	42.50 ¹⁵¹	26.069 ⁶³	47.54 ²⁵¹	16.694 ³	41.23 ⁶⁶
30.9	20.808 ⁶¹	43.79 ¹²⁹	25.956 ¹¹³	49.72 ²¹⁸	16.652 ⁴²	40.68 ⁵⁵
Feb. 9.9	20.707 ¹⁰¹	44.84 ¹⁰⁵	25.799 ¹⁵⁷	51.52 ¹⁸⁰	16.568 ⁸⁴	40.26 ⁴²
19.8	20.572 ¹³⁵	45.64 ⁸⁰	25.604 ¹⁹⁵	52.91 ¹³⁹	16.448 ¹²⁰	39.96 ³⁰
29.8	20.412 ¹⁶⁰	46.17 ⁵³	25.381 ²²³	53.85 ⁹⁴	16.300 ¹⁴⁸	39.78 ¹⁸
Mar. 10.8	20.235 ¹⁷⁷	46.43 ²⁶	25.140 ²⁴¹	54.34 ⁴⁹	16.134 ¹⁶⁶	39.70 ⁸
20.7	20.052 ¹⁸³	46.42 ¹	24.891 ²⁴⁹	54.36 ²	15.961 ¹⁷³	39.72 ²
30.7	19.873 ¹⁷⁹	46.14 ²⁸	24.646 ²⁴⁵	53.93 ⁴³	15.790 ¹⁷¹	39.85 ¹³
Apr. 9.7	19.707 ¹⁶⁶	45.60 ⁵⁴	24.415 ²³¹	53.05 ⁸⁸	15.632 ¹⁵⁸	40.09 ²⁴
19.7	19.563 ¹⁴⁴	44.80 ⁸⁰	24.208 ²⁰⁷	51.75 ¹³⁰	15.496 ¹³⁶	40.43 ³⁴
29.6	19.450 ¹¹³	43.76 ¹⁰⁴	24.033 ¹⁷⁵	50.04 ¹⁷¹	15.390 ¹⁰⁶	40.88 ⁴⁵
May 9.6	19.371 ⁷⁹	42.50 ¹²⁶	23.897 ¹³⁶	47.98 ²⁰⁶	15.319 ⁷¹	41.44 ⁵⁶
19.6	19.332 ³⁹	41.02 ¹⁴⁸	23.805 ⁹²	45.61 ²³⁷	15.288 ³¹	42.12 ⁶⁸
29.6	19.335 ³	39.36 ¹⁶⁶	23.759 ⁴⁶	42.96 ²⁶⁵	15.298 ¹⁰	42.92 ⁸⁰
June 8.5	19.380 ⁴⁵	37.54 ¹⁸²	23.762 ³	40.12 ²⁸⁴	15.351 ⁵³	43.82 ⁹⁰
18.5	19.466 ⁸⁶	35.62 ¹⁹²	23.814 ⁵²	37.13 ²⁹⁹	15.445 ⁹⁴	44.80 ⁹⁸
28.5	19.590 ¹²⁴	33.63 ¹⁹⁹	23.912 ⁹⁸	34.08 ³⁰⁵	15.578 ¹³³	45.86 ¹⁰⁶
July 8.4	19.750 ¹⁶⁰	31.62 ²⁰¹	24.055 ¹⁴³	31.05 ³⁰³	15.746 ¹⁶⁸	46.96 ¹¹⁰
18.4	19.943 ¹⁹³	29.66 ¹⁹⁶	24.239 ¹⁸⁴	28.12 ²⁹³	15.946 ²⁰⁰	48.06 ¹¹⁰
28.4	20.163 ²²⁰	27.80 ¹⁸⁶	24.459 ²²⁰	25.37 ²⁷⁵	16.172 ²²⁶	49.14 ¹⁰⁸
Aug. 7.4	20.406 ²⁴³	26.10 ¹⁷⁰	24.711 ²⁵²	22.89 ²⁴⁸	16.421 ²⁴⁹	50.15 ¹⁰¹
17.3	20.667 ²⁶¹	24.63 ¹⁴⁷	24.989 ²⁷⁸	20.77 ²¹²	16.688 ²⁶⁷	51.06 ⁹¹
27.3	20.943 ²⁷⁶	23.42 ¹²¹	25.289 ³⁰⁰	19.07 ¹⁷⁰	16.969 ²⁸¹	51.82 ⁷⁶
Sept. 6.3	21.229 ²⁸⁶	22.54 ⁸⁸	25.605 ³¹⁶	17.86 ¹²¹	17.260 ²⁹¹	52.40 ⁵⁸
16.3	21.520 ²⁹¹	22.02 ⁵²	25.930 ³²⁵	17.18 ⁶⁸	17.557 ²⁹⁷	52.77 ³⁷
26.2	21.813 ²⁹³	21.88 ¹⁴	26.259 ³²⁹	17.06 ¹²	17.856 ²⁹⁹	52.93 ¹⁶
Oct. 6.2	22.103 ²⁹⁰	22.13 ²⁵	26.585 ³²⁶	17.51 ⁴⁵	18.154 ²⁹⁸	52.85 ⁸
16.2	22.386 ²⁸³	22.75 ⁶²	26.903 ³¹⁸	18.53 ¹⁰²	18.448 ²⁹⁴	52.55 ³⁰
26.1	22.659 ²⁷³	23.73 ⁹⁸	27.205 ³⁰²	20.08 ¹⁵⁵	18.733 ²⁸⁵	52.05 ⁵⁰
Nov. 5.1	22.916 ²⁵⁷	25.03 ¹³⁰	27.485 ²⁸⁰	22.09 ²⁰¹	19.005 ²⁷²	51.37 ⁶⁸
15.1	23.153 ²³⁷	26.58 ¹⁵⁵	27.736 ²⁵¹	24.50 ²⁴¹	19.258 ²⁵³	50.56 ⁸¹
25.1	23.364 ²¹¹	28.31 ¹⁷³	27.953 ²¹⁷	27.22 ²⁷²	19.488 ²³⁰	49.65 ⁹¹
Dec. 5.0	23.544 ¹⁸⁰	30.17 ¹⁸⁶	28.128 ¹⁷⁵	30.14 ²⁹²	19.689 ²⁰¹	48.70 ⁹⁵
15.0	23.688 ¹⁴⁴	32.07 ¹⁹⁰	28.257 ¹²⁹	33.16 ³⁰²	19.854 ¹⁶⁵	47.74 ⁹⁶
25.0	23.791 ¹⁰³	33.94 ¹⁸⁷	28.335 ⁷⁸	36.16 ³⁰⁰	19.979 ¹²⁵	46.83 ⁹¹
35.0	23.850 ⁵⁹	35.72 ¹⁷⁸	28.361 ²⁶	39.04 ²⁸⁸	20.060 ⁸¹	45.99 ⁸⁴
Mean Place	20.438	38.34	25.184	40.02	16.355	42.21
Sec δ , Tan δ	1.014	-0.171	1.233	-0.721	1.008	+0.130
L α , L δ	0.00	0.0	-0.02	0.0	0.00	0.0
ω α , ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0
Authority and	A. F.	257	A. N.	262	A. F.	265

APPARENT PLACES OF STARS, 1928. 313

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Aurigæ.		θ Aurigæ.		1 Geminorum.	
	2.07	A o p	2.72	A o p	4.30	G 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 05	^m 54	^h 05	^m 54	^h 05	^m 59
	^s 15.205	[°] 34.11	^s 48.958	[°] 37.12	^s 44.793	[°] 23.16
Jan. 1.0	15.205	34.11	48.958	37.12	44.793	23.16
0.9	15.273	35.58	49.026	36.98	44.860	09.25
20.9	15.275	37.01	49.035	37.99	44.876	09.47
30.9	15.214	38.34	48.987	38.95	44.841	09.73
Feb. 9.9	15.094	39.52	48.886	39.81	44.761	09.99
19.8	14.924	40.50	48.740	40.54	44.640	10.25
29.8	14.715	41.24	48.559	41.09	44.487	10.47
Mar. 10.8	14.480	41.71	48.354	41.44	44.313	10.63
20.8	14.234	41.88	48.139	41.59	44.129	10.74
30.7	13.991	41.77	47.927	41.53	43.946	10.78
Apr. 9.7	13.765	41.38	47.730	41.27	43.776	10.77
19.7	13.569	40.75	47.560	40.83	43.629	10.71
29.6	13.414	39.90	47.426	40.22	43.512	10.62
May 9.6	13.308	38.89	47.335	39.58	43.434	10.52
19.6	13.257	37.77	47.295	38.78	43.398	10.43
29.6	13.264	36.57	47.307	37.98	43.407	10.37
June 8.5	13.329	35.36	47.370	37.1	43.461	10.36
18.5	13.451	34.17	47.485	36.45	43.559	10.40
28.5	13.628	33.03	47.648	35.72	43.699	10.50
July 8.5	13.855	31.99	47.855	35.10	43.877	10.66
18.4	14.126	31.06	48.101	34.57	44.089	10.86
28.4	14.435	30.26	48.381	34.15	44.331	11.11
Aug. 7.4	14.777	29.61	48.689	33.82	44.598	11.37
17.3	15.144	29.11	49.021	33.59	44.885	11.63
27.3	15.532	28.77	49.370	33.46	45.187	11.87
Sept. 6.3	15.935	28.58	49.732	33.41	45.501	12.07
16.3	16.347	28.54	50.102	33.44	45.824	12.21
26.2	16.763	28.66	50.475	33.56	46.150	12.30
Oct. 6.2	17.179	28.93	50.848	33.75	46.476	12.32
16.2	17.588	29.36	51.216	34.02	46.799	12.28
26.2	17.986	29.94	51.575	34.38	47.115	12.19
Nov. 5.1	18.365	30.68	51.917	34.83	47.418	12.06
15.1	18.719	31.58	52.237	35.38	47.703	11.93
25.1	19.039	32.64	52.529	36.03	47.963	11.82
Dec. 5.0	19.318	33.84	52.784	36.79	48.193	11.75
15.0	19.548	35.16	52.996	37.65	48.384	11.73
25.0	19.722	36.56	53.158	38.58	48.533	11.77
35.0	19.834	38.01	53.264	39.57	48.635	11.89
Mean Place	14.752	31.18	48.611	33.54	44.518	07.57
Sec δ , Tan δ	1.413	+0.998	1.256	+0.759	1.089	+0.430
L α , L δ	+0.03	0.0	+0.02	0.0	+0.01	0.0
ω α , ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0
Authority and Catalogue No.	A. E.	368	A. E.	369		373

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Orionis. B 2		η Geminorum. M a		ζ Canis Majoris. B 3	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
Mean Solar Date.						
	^h ₀₆ ^m ₀₃	[°] ₁₄ ['] ₄₆	^h ₀₆ ^m ₁₀	[°] ₂₂ ['] ₃₁	^h ₀₆ ^m ₁₇	[°] ₃₀ ['] ₀₁
Jan. 1·0	27·848 ^s	43·77 ["]	32·089 ^s	46·59 ["]	33·643 ^s	49·05 ["]
11·0	27·914 ⁶⁶	43·41 ³⁶	32·168 ⁷⁹	46·69 ¹⁰	33·676 ³³	51·78 ²⁷³
20·9	27·931 ¹⁷	43·14 ²⁷	32·194 ²⁶	46·86 ¹⁷	33·657 ¹⁹	54·30 ²⁵²
30·9	27·901 ³⁰	42·95 ¹⁹	32·170 ²⁴	47·09 ²³	33·587 ⁷⁰	56·55 ²²⁵
Feb. 9·9	27·826 ⁷⁵	42·84 ¹¹	32·098 ⁷²	47·34 ²⁵	33·471 ¹¹⁶	58·47 ¹⁹²
19·8	27·712 ¹¹⁴	42·80 ⁴	31·984 ¹¹⁴	47·60 ²⁶	33·314 ¹⁵⁷	60·01 ¹⁵⁴
29·8	27·568 ¹⁴⁴	42·81 ¹	31·838 ¹⁴⁶	47·84 ²⁴	33·125 ¹⁸⁹	61·15 ¹¹⁴
Mar. 10·8	27·403 ¹⁶⁵	42·85 ⁴	31·668 ¹⁷⁰	48·04 ²⁰	32·913 ²¹²	61·88 ⁷³
20·8	27·228 ¹⁷⁵	42·93 ⁸	31·486 ¹⁸²	48·19 ¹⁵	32·689 ²²⁴	62·18 ³⁰
30·7	27·053 ¹⁷⁵	43·03 ¹⁰	31·304 ¹⁸²	48·29 ¹⁰	32·463 ²²⁶	62·06 ¹²
Apr. 9·7	26·890 ¹⁶³	43·15 ¹²	31·132 ¹⁷²	48·33 ⁴	32·246 ²¹⁷	61·52 ⁵⁴
19·7	26·747 ¹⁴³	43·32 ¹⁷	30·981 ¹⁵¹	48·33 [—]	32·046 ²⁰⁰	60·58 ⁹⁴
29·7	26·633 ¹¹⁴	43·52 ²⁰	30·858 ¹²³	48·30 ³	31·874 ¹⁷²	59·26 ¹³²
May 9·6	26·555 ⁷⁸	43·77 ²⁵	30·773 ⁸⁵	48·25 ⁵	31·735 ¹³⁹	57·58 ¹⁶⁸
19·6	26·517 ³⁸	44·09 ³²	30·728 ⁴⁵	48·21 ⁴	31·634 ¹⁰¹	55·59 ¹⁹⁹
29·6	26·521 ⁴	44·48 ³⁹	30·727 ¹	48·19 ²	31·575 ⁵⁹	53·32 ²²⁷
June 8·5	26·567 ⁴⁶	44·95 ⁴⁷	30·771 ⁴⁴	48·20 ¹	31·560 ¹⁵	50·82 ²⁵⁰
18·5	26·656 ⁸⁹	45·48 ⁵³	30·858 ⁸⁷	48·26 ⁶	31·590 ³⁰	48·16 ²⁶⁶
28·5	26·784 ¹²⁸	46·07 ⁵⁹	30·987 ¹²⁹	48·37 ¹¹	31·663 ⁷³	45·40 ²⁷⁶
July 8·5	26·949 ¹⁶⁵	46·70 ⁶³	31·154 ¹⁶⁷	48·53 ¹⁶	31·777 ¹¹⁴	42·62 ²⁷⁸
18·4	27·146 ¹⁹⁷	47·36 ⁶⁶	31·356 ²⁰²	48·72 ¹⁹	31·931 ¹⁵⁴	39·88 ²⁷⁴
28·4	27·372 ²²⁶	48·02 ⁶⁶	31·588 ²³²	48·94 ²²	32·120 ¹⁸⁹	37·28 ²⁶⁰
Aug. 7·4	27·622 ²⁵⁰	48·65 ⁶³	31·845 ²⁵⁷	49·17 ²³	32·341 ²²¹	34·89 ²³⁹
17·4	27·892 ²⁷⁰	49·22 ⁵⁷	32·123 ²⁷⁸	49·39 ²²	32·590 ²⁴⁹	32·80 ²⁰⁹
27·3	28·177 ²⁸⁵	49·70 ⁴⁸	32·419 ²⁹⁶	49·58 ¹⁹	32·862 ²⁷²	31·07 ¹⁷³
Sept. 6·3	28·473 ²⁹⁶	50·07 ³⁷	32·728 ³⁰⁹	49·73 ¹⁵	33·152 ²⁹⁰	29·77 ¹³⁰
16·3	28·777 ³⁰⁴	50·31 ²⁴	33·046 ³¹⁸	49·81 ⁸	33·456 ³⁰⁴	28·96 ⁸¹
26·2	29·086 ³⁰⁹	50·39 ⁸	33·369 ³²³	49·82 ¹	33·769 ³¹³	28·67 ²⁹
Oct. 6·2	29·396 ³¹⁰	50·32 ⁷	33·694 ³²⁵	49·76 ⁶	34·085 ³¹⁶	28·93 ²⁶
16·2	29·703 ³⁰⁷	50·11 ²¹	34·018 ³²⁴	49·63 ¹³	34·399 ³¹⁴	29·73 ⁸⁰
26·2	30·003 ³⁰⁰	49·76 ³⁵	34·336 ³¹⁸	49·44 ¹⁹	34·704 ³⁰⁵	31·04 ¹³¹
Nov. 5·1	30·291 ²⁸⁸	49·30 ⁴⁶	34·643 ³⁰⁷	49·22 ²²	34·995 ²⁹¹	32·82 ¹⁷⁸
15·1	30·563 ²⁷²	48·76 ⁵⁴	34·934 ²⁹¹	48·98 ²⁴	35·264 ²⁶⁹	35·01 ²¹⁹
25·1	30·811 ²⁴⁸	48·18 ⁵⁸	35·202 ²⁶⁸	48·76 ²²	35·504 ²⁴⁰	37·53 ²⁵²
Dec. 5·1	31·031 ²²⁰	47·59 ⁵⁹	35·440 ²³⁸	48·59 ¹⁷	35·709 ²⁰⁵	40·27 ²⁷⁴
15·0	31·216 ¹⁸⁵	47·04 ⁵⁵	35·641 ²⁰¹	48·47 ¹²	35·874 ¹⁶⁵	43·15 ²⁸⁸
25·0	31·361 ¹⁴⁵	46·54 ⁵⁰	35·801 ¹⁶⁰	48·43 ⁴	35·992 ¹¹⁸	46·05 ²⁹⁰
35·0	31·460 ⁹⁹	46·11 ⁴³	35·914 ¹¹³	48·47 ⁴	36·060 ⁶⁸	48·88 ²⁸³
Mean Place	27·571	42·73	31·806	45·18	32·832	49·17
Sec δ, Tan δ	1·034	+0·264	1·083	+0·415	1·155	—0·578
L α, L δ	+0·01	0·0	+0·01	0·0	—0·02	0·0
ω α, ω δ	0·00	+1·0	0·00	+1·0	0·00	+1·0
Authority and Catalogue No.	A. E.	377	A. E.	381	A. E.	389

APPARENT PLACES OF STARS, 1928. 315

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	μ Geminorum. 3·19 Ma		β Canis Majoris. 1·99 BI		α Argus. —0·86 Fo	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
Mean Solar Date.	^h 06 ^m 18	[°] 22 ['] 33	^h 06 ^m 19	[°] 17 ['] 54	^h 06 ^m 22	[°] 52 ['] 38
Jan. 1·0	36·516 ⁸⁶	08·87 ⁸	32·220 ⁵²	68·15 ²²²	22·936 ¹⁷	79·64 ³³⁶
11·0	36·602 ³⁵	08·95 ¹⁶	32·272 ³	70·37 ²⁰⁴	22·919 ⁸⁹	83·00 ³¹⁴
20·9	36·637 ¹⁷	09·11 ²²	32·275 ⁴⁴	72·41 ¹⁸¹	22·830 ¹⁵⁶	86·14 ²⁸⁴
30·9	36·620	09·33	32·231	74·22	22·674	88·98
Feb. 9·9	36·555 ⁶⁵	09·60 ²⁷	32·142 ⁸⁹	75·75 ¹⁵³	22·456 ²¹⁸	91·43 ²⁴⁵
19·9	36·448 ¹⁰⁷	09·88 ²⁸	32·015 ¹²⁷	76·97 ¹²²	22·186 ²⁷⁰	93·44 ²⁰¹
29·8	36·306 ¹⁴²	10·14 ²⁶	31·856 ¹⁵⁹	77·86 ⁸⁹	21·875 ³¹¹	94·97 ¹⁵³
Mar. 10·8	36·139 ¹⁶⁷	10·37 ²³	31·676 ¹⁸⁰	78·41 ⁵⁵	21·534 ³⁴¹	95·99 ¹⁰²
20·8	35·959 ¹⁸⁰	10·56 ¹⁹	31·483 ¹⁹³	78·63 ²²	21·176 ³⁵⁸	96·49 ⁵⁰
30·7	35·777 ¹⁸²	10·69 ¹³	31·289 ¹⁹⁴	78·51 ¹²	20·815 ³⁶¹	96·46 ³
Apr. 9·7	35·604 ¹⁷³	10·76 ⁷	31·102 ¹⁸⁷	78·06 ⁴⁵	20·464 ³⁵¹	95·91 ⁵⁵
19·7	35·449 ¹⁵⁵	10·78 ²	30·933 ¹⁶⁹	77·29 ⁷⁷	20·134 ³³⁰	94·86 ¹⁰⁵
29·7	35·323 ¹²⁶	10·76 ²	30·789 ¹⁴⁴	76·22 ¹⁹⁷	19·835 ²⁹⁹	93·34 ¹⁵²
May 9·6	35·233 ⁹⁰	10·73 ³	30·676 ¹¹³	74·86 ⁵⁶	19·578 ²⁵⁷	91·35 ¹⁹⁹
19·6	35·182 ⁵¹	10·69 ⁴	30·600 ⁷⁶	73·24 ⁶²	19·370 ²⁰⁸	89·02 ²³³
29·6	35·175 ⁷	10·67 ²	30·563 ³⁷	71·39 ⁸⁵	19·216 ¹⁵⁴	86·32 ²⁷⁰
June 8·6	35·211 ³⁶	10·67	30·567 ⁴	69·35 ²⁰⁴	19·120 ⁹⁶	83·34 ²⁹⁸
18·5	35·290 ⁷⁹	10·71 ⁴	30·612 ⁴⁵	67·17 ²¹⁸	19·084 ³⁶	80·16 ³¹⁸
28·5	35·411 ¹²¹	10·79 ⁸	30·696 ⁸⁴	64·89 ²²⁸	19·110 ²⁶	76·85 ³³¹
July 8·5	35·571 ¹⁶⁰	10·91 ¹²	30·818 ¹²²	62·59 ²³⁰	19·196 ⁸⁶	73·51 ³³⁴
18·4	35·766 ¹⁹⁵	11·06 ¹⁵	30·975 ¹⁵⁷	60·35 ²²⁴	19·340 ¹⁴⁴	70·22 ³²⁹
28·4	35·991 ²²⁵	11·23 ¹⁷	31·162 ¹⁸⁷	58·18 ²¹⁷	19·540 ²⁰⁰	67·07 ³¹⁵
Aug. 7·4	36·242 ²⁵¹	11·41 ¹⁸	31·378 ²¹⁶	56·20 ¹⁹⁸	19·791 ²⁵¹	64·18 ²⁸⁹
17·4	36·516 ²⁷⁴	11·57 ¹⁶	31·618 ²⁴⁰	54·46 ¹⁷⁴	20·086 ²⁹⁵	61·63 ²⁵⁵
27·3	36·808 ²⁹²	11·70 ¹³	31·878 ²⁶⁰	53·02 ¹⁴⁴	20·421 ³³⁵	59·50 ²¹³
Sept. 6·3	37·113 ³⁰⁵	11·79 ⁹	32·154 ²⁷⁶	51·94 ¹⁰⁸	20·788 ³⁶⁷	57·88 ¹⁶²
16·3	37·429 ³¹⁶	11·81 ²	32·441 ²⁸⁷	51·28 ⁶⁶	21·178 ³⁹⁰	56·83 ¹⁰⁵
26·3	37·752 ³²³	11·75 ⁶	32·737 ²⁹⁶	51·05 ²³	21·582 ⁴⁰⁴	56·40 ⁴³
Oct. 6·2	38·079 ³²⁷	11·62 ¹³	33·036 ²⁹⁹	51·29 ²⁴	21·993 ⁴¹¹	56·61 ²¹
16·2	38·405 ³²⁶	11·43 ¹⁹	33·333 ²⁹⁷	51·98 ⁶⁹	22·400 ⁴⁰⁷	57·45 ⁸⁴
26·2	38·726 ³²¹	11·18 ²⁵	33·625 ²⁹²	53·10 ¹¹²	22·792 ³⁹²	58·92 ¹⁴⁷
Nov. 5·1	39·038 ³¹²	10·89 ²⁹	33·905 ²⁸⁰	54·62 ¹⁵²	23·159 ³⁶⁷	60·96 ²⁰⁴
15·1	39·335 ²⁹⁷	10·60 ²⁹	34·167 ²⁶²	56·47 ¹⁸⁵	23·490 ³³¹	63·50 ²⁵⁴
25·1	39·608 ²⁷³	10·33 ²⁷	34·406 ²³⁹	58·58 ²¹¹	23·776 ²⁸⁶	66·46 ²⁹⁶
Dec. 5·1	39·854 ²⁴⁶	10·10 ²³	34·614 ²⁰⁸	60·87 ²²⁹	24·007 ²³¹	69·71 ³²⁵
15·0	40·065 ²¹¹	09·94 ¹⁶	34·786 ¹⁷²	63·25 ²³⁸	24·175 ¹⁶⁸	73·15 ³⁴⁴
25·0	40·233 ¹⁶⁸	09·87 ⁷	34·917 ¹³¹	65·65 ²⁴⁰	24·276 ¹⁰¹	76·66 ³⁵¹
35·0	40·355 ¹²²	09·89 ²	35·001 ⁸⁴	67·97 ²³²	24·305 ²⁹	80·12 ³⁴⁶
Mean Place	36·226	07·50	31·659	68·55	21·143	80·14
Sec δ , Tan δ	1·083	+0·415	1·051	—0·323	1·649	—1·311
L α , L δ	+0·01	0·0	—0·01	0·0	—0·03	0·0
ω α , ω δ	0·00	+1·0	0·00	+1·0	—0·01	+1·0
Authority and Catalogue No.	A. E.	390	A. E.	394	A. E.	396

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Geminorum. 4.06 B 5		γ Geminorum. 1.93 A 0		γ Argus. 3.18 B 8	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
Mean Solar Date.	^h 06 ^m 24	[°] 20 ['] 15	^h 06 ^m 33	[°] 16 ['] 27	^h 06 ^m 35	[°] 43 ['] 07
Jan. 1.0	41.526 ^s	34.50 ^s	33.410 ^s	45.06 ^s	34.661 ^s	53.32 ^s
11.0	41.616 ⁹⁰	34.44 ⁶	33.508 ⁹⁸	44.73 ³³	34.690 ²⁹	56.55 ³²³
20.9	41.656 ⁴⁰	34.46 ²	33.555 ⁴⁷	44.51 ²²	34.658 ³²	59.59 ³⁰⁴
30.9	41.645 ¹¹	34.56 ¹⁰	33.551 ⁴	44.39 ¹²	34.566 ⁹²	62.35 ²⁷⁶
Feb. 9.9	41.585 ⁶⁰	34.73 ¹⁷	33.500 ⁵¹	44.37 ²	34.419 ¹⁴⁷	64.76 ²⁴¹
19.9	41.483 ¹⁰²	34.92 ¹⁹	33.406 ⁹⁴	44.42 ⁵	34.224 ¹⁹⁵	66.76 ²⁰⁰
29.8	41.346 ¹³⁷	35.13 ²¹	33.276 ¹³⁰	44.53 ¹¹	33.991 ²³³	68.33 ¹⁵⁷
Mar. 10.8	41.183 ¹⁶³	35.34 ²¹	33.121 ¹⁵⁵	44.67 ¹⁴	33.729 ²⁶²	69.42 ¹⁰⁹
20.8	41.007 ¹⁷⁶	35.52 ¹⁸	32.950 ¹⁷¹	44.83 ¹⁶	33.450 ²⁷⁹	70.02 ⁶⁰
30.8	40.827 ¹⁸⁰	35.67 ¹⁵	32.774 ¹⁷⁶	45.00 ¹⁷	33.164 ²⁸⁶	70.13 ¹¹
Apr. 9.7	40.656 ¹⁷¹	35.79 ¹²	32.605 ¹⁶⁹	45.18 ¹⁸	32.885 ²⁷⁹	69.75 ³⁸
19.7	40.502 ¹⁵⁴	35.88 ⁹	32.452 ¹⁵³	45.36 ¹⁸	32.623 ²⁶²	68.90 ⁸⁵
29.7	40.375 ¹²⁷	35.95 ⁷	32.324 ¹²⁸	45.55 ¹⁹	32.386 ²³⁷	67.60 ¹³⁰
May 9.6	40.283 ⁹²	36.02 ⁷	32.226 ⁹⁸	45.77 ²²	32.183 ²⁰³	65.88 ¹⁷²
19.6	40.229 ⁵⁴	36.09 ⁷	32.166 ⁶⁰	46.01 ²⁴	32.020 ¹⁶³	63.77 ²¹¹
29.6	40.216 ¹³	36.19 ¹⁰	32.146 ²⁰	46.29 ²⁸	31.903 ¹¹⁷	61.33 ²⁴⁴
June 8.6	40.246 ³⁰	36.31 ¹²	32.167 ²¹	46.61 ³²	31.834 ⁶⁹	58.61 ²⁷²
18.5	40.318 ⁷²	36.48 ¹⁷	32.229 ⁶²	46.97 ³⁶	31.814 ²⁰	55.67 ²⁹⁴
28.5	40.431 ¹¹³	36.68 ²⁰	32.331 ¹⁰²	47.37 ⁴⁰	31.845 ³¹	52.60 ³⁰⁷
July 8.5	40.582 ¹⁵¹	36.92 ²⁴	32.469 ¹³⁸	47.80 ⁴³	31.926 ⁸¹	49.47 ³¹³
18.5	40.767 ¹⁸⁵	37.18 ²⁶	32.642 ¹⁷³	48.23 ⁴³	32.054 ¹²⁸	46.37 ³¹⁰
28.4	40.983 ²¹⁶	37.44 ²⁶	32.845 ²⁰³	48.66 ⁴³	32.228 ¹⁷⁴	43.38 ²⁹⁹
Aug. 7.4	41.225 ²⁴²	37.70 ²⁶	33.075 ²³⁰	49.06 ⁴⁰	32.443 ²¹⁵	40.61 ²⁷⁷
17.4	41.488 ²⁶³	37.93 ²³	33.327 ²⁵²	49.40 ³⁴	32.696 ²⁵³	38.15 ²⁴⁶
27.3	41.771 ²⁸³	38.10 ¹⁷	33.599 ²⁷²	49.66 ²⁶	32.981 ²⁸⁵	36.07 ²⁰⁸
Sept. 6.3	42.069 ²⁹⁸	38.20 ¹⁰	33.885 ²⁸⁶	49.81 ¹⁵	33.293 ³¹²	34.46 ¹⁶¹
16.3	42.379 ³¹⁰	38.21 ¹	34.184 ²⁹⁹	49.85 ⁴	33.627 ³³⁴	33.39 ¹⁰⁷
26.3	42.696 ³¹⁷	38.13 ⁸	34.493 ³⁰⁹	49.75 ¹⁰	33.976 ³⁴⁹	32.89 ⁵⁰
Oct. 6.2	43.017 ³²¹	37.95 ¹⁸	34.807 ³¹⁴	49.50 ²⁵	34.332 ³⁵⁶	32.99 ¹⁰
16.2	43.339 ³²²	37.68 ²⁷	35.123 ³¹⁶	49.13 ³⁷	34.689 ³⁵⁷	33.70 ⁷¹
26.2	43.658 ³¹⁹	37.33 ³⁵	35.437 ³¹⁴	48.65 ⁴⁸	35.039 ³⁵⁰	35.02 ¹³²
Nov. 5.2	43.969 ³¹¹	36.94 ³⁹	35.744 ³⁰⁷	48.07 ⁵⁸	35.372 ³³³	36.89 ¹⁸⁷
15.1	44.264 ²⁹⁵	36.51 ⁴³	36.038 ²⁹⁴	47.43 ⁶⁴	35.680 ³⁰⁸	39.25 ²³⁶
25.1	44.540 ²⁷⁶	36.09 ⁴²	36.313 ²⁷⁵	46.77 ⁶⁶	35.955 ²⁷⁵	42.01 ²⁷⁶
Dec. 5.1	44.787 ²⁴⁷	35.71 ³⁸	36.562 ²⁴⁹	46.13 ⁶⁴	36.188 ²³³	45.07 ³⁰⁶
15.0	45.000 ²¹³	35.39 ³²	36.778 ²¹⁶	45.54 ⁵⁹	36.372 ¹⁸⁴	48.34 ³²⁷
25.0	45.171 ¹⁷¹	35.15 ²⁴	36.954 ¹⁷⁶	45.03 ⁵¹	36.501 ¹²⁹	51.69 ³³⁵
35.0	45.296 ¹²⁵	35.01 ¹⁴	37.084 ¹³⁰	44.61 ⁴²	36.570 ⁶⁹	55.00 ³³¹
Mean Place	41.234	33.23	33.118	43.85	33.411	54.94
Sec δ , Tan δ	1.066	+0.369	1.043	+0.295	1.370	-0.937
L a , L δ	+0.01	0.0	+0.01	-0.1	-0.02	-0.1
ω a , ω δ	0.00	+1.0	0.00	+1.0	-0.01	+1.0
Authority and Catalogue No.	399		A. E. 403		A. E. 406	

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ϵ Geminorum. 3.18 G 5		ξ Geminorum. 3.40 F 5		α Canis Maj. (Brighter Star) -1.58 A 0	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
Mean Solar Date.	^h 06 ^m 39	[°] 25 ['] 12	^h 06 ^m 41	[°] 12 ['] 58	^h 06 ^m 41	[°] 16 ['] 36
Jan. 1.0	30.431 ^s	15.39 ["]	15.160 ^s	30.06 ["]	58.964 ^s	58.86 ["]
11.0	30.542 ¹¹¹	15.59 ²⁰	15.262 ¹⁰²	29.48 ⁵⁸	59.032 ⁶⁸	61.12 ²²⁶
20.9	30.599 ⁵⁷	15.89 ³⁰	15.314 ⁵²	29.03 ⁴⁵	59.054 ²²	63.23 ²¹¹
30.9	30.602 ³	16.27 ³⁸	15.316 ²	28.71 ³²	59.027 ²⁷	65.11 ¹⁸⁸
Feb. 9.9	30.554 ⁴⁸	16.70 ⁴³	15.271 ⁴⁵	28.50 ²¹	58.956 ⁷¹	66.72 ¹⁶¹
19.9	30.460 ⁹⁴	17.14 ⁴⁴	15.182 ⁸⁹	28.40 ¹⁰	58.842 ¹¹⁴	68.03 ¹³¹
29.8	30.327 ¹³³	17.56 ⁴²	15.058 ¹²⁴	28.39 ¹	58.693 ¹⁴⁹	69.01 ⁹⁸
Mar. 10.8	30.166 ¹⁶¹	17.93 ³⁷	14.907 ¹⁵¹	28.45 ⁶	58.521 ¹⁷²	69.69 ⁶⁸
20.8	29.987 ¹⁷⁹	18.24 ³¹	14.740 ¹⁶⁷	28.57 ¹²	58.333 ¹⁸⁸	70.03 ³⁴
30.8	29.802 ¹⁸⁵	18.47 ²³	14.567 ¹⁷³	28.74 ¹⁷	58.141 ¹⁹²	70.03 ²⁸
Apr. 9.7	29.622 ¹⁸⁰	18.61 ¹⁴	14.399 ¹⁶⁸	28.95 ²¹	57.956 ¹⁸⁵	69.75 ⁶³
19.7	29.458 ¹⁶⁴	18.67 ⁶	14.246 ¹⁵³	29.19 ²⁴	57.782 ¹⁷⁴	69.12 ⁶³
29.7	29.319 ¹³⁹	18.65 ²	14.115 ¹³¹	29.48 ⁴⁹	57.634 ¹⁴⁸	68.18 ⁹⁴
May 9.6	29.214 ¹⁰⁵	18.58 ⁷	14.014 ¹⁰¹	29.82 ¹⁴	57.515 ¹¹⁹	66.99 ¹¹⁹
19.6	29.147 ⁶⁷	18.46 ¹²	13.948 ⁶⁶	30.29 ¹⁸	57.428 ⁸⁷	65.55 ¹⁴⁴
29.6	29.121 ²⁶	18.31 ¹⁵	13.921 ²⁷	30.64 ⁴⁴	57.376 ⁵²	63.88 ¹⁶⁷
June 8.6	29.138 ¹⁷	18.16 ¹⁵	13.934 ¹³	31.13 ⁴⁹	57.365 ¹¹	62.02 ¹⁸⁶
18.5	29.199 ⁶¹	18.02 ¹⁴	13.987 ⁵³	31.67 ⁵⁴	57.393 ²⁸	60.02 ²⁰⁰
28.5	29.302 ¹⁰³	17.89 ¹³	14.078 ⁹¹	32.24 ⁵⁷	57.462 ⁶⁹	57.93 ²⁰⁹
July 8.5	29.444 ¹⁴²	17.78 ¹¹	14.206 ¹²⁸	32.84 ⁶⁰	57.566 ¹⁰⁴	55.78 ²¹⁵
18.5	29.622 ¹⁷⁸	17.69 ⁹	14.368 ¹⁶²	33.45 ⁶¹	57.705 ¹³⁹	53.66 ²¹²
28.4	29.833 ²¹¹	17.61 ⁸	14.560 ¹⁹²	34.04 ⁵⁹	57.876 ¹⁷¹	51.64 ²⁰²
Aug. 7.4	30.072 ²³⁹	17.53 ⁸	14.778 ²¹⁸	34.57 ⁵³	58.076 ²⁰⁰	49.78 ¹⁸⁶
17.4	30.336 ²⁶⁴	17.44 ⁹	15.020 ²⁴²	35.03 ⁴⁶	58.304 ²²⁸	48.13 ¹⁶⁵
27.3	30.621 ²⁸⁵	17.33 ¹¹	15.281 ²⁶¹	35.38 ³⁵	58.552 ²⁴⁸	46.78 ¹³⁵
Sept. 6.3	30.923 ³⁰²	17.18 ¹⁵	15.558 ²⁷⁷	35.59 ²¹	58.819 ²⁶⁷	45.78 ¹⁰⁰
16.3	31.238 ³¹⁵	17.00 ¹⁸	15.849 ²⁹¹	35.65 ⁶	59.098 ²⁷⁹	45.15 ⁶³
26.3	31.564 ³²⁶	16.76 ²⁴	16.150 ³⁰¹	35.54 ¹¹	59.389 ²⁹¹	44.95 ²⁰
Oct. 6.2	31.897 ³³³	16.47 ²⁹	16.458 ³⁰⁸	35.26 ²⁸	59.686 ²⁹⁷	45.19 ²⁴
16.2	32.233 ³³⁶	16.14 ³³	16.769 ³¹¹	34.81 ⁴⁵	59.987 ³⁰¹	45.90 ⁷¹
26.2	32.569 ³³⁶	15.79 ³⁵	17.079 ³¹⁰	34.20 ⁶¹	60.283 ²⁹⁶	47.03 ¹¹³
Nov. 5.2	32.897 ³²⁸	15.43 ³⁶	17.383 ³⁰⁴	33.47 ⁷³	60.570 ²⁸⁷	48.53 ¹⁵⁰
15.1	33.213 ³¹⁶	15.09 ³⁴	17.676 ²⁹³	32.66 ⁸¹	60.841 ²⁷¹	50.39 ¹⁸⁶
25.1	33.508 ²⁹⁵	14.81 ²⁸	17.951 ²⁷⁵	31.79 ⁸⁷	61.095 ²⁵⁴	52.50 ²¹¹
Dec. 5.1	33.778 ²⁷⁰	14.61 ²⁰	18.201 ²⁵⁰	30.92 ⁸⁷	61.318 ²²³	54.82 ²³²
15.0	34.013 ²³⁵	14.50 ¹¹	18.419 ²¹⁸	30.09 ⁸³	61.507 ¹⁸⁹	57.24 ²⁴²
25.0	34.207 ¹⁹⁴	14.51 ¹	18.598 ¹⁷⁹	29.32 ⁷⁷	61.656 ¹⁴⁹	59.67 ²⁴³
35.0	34.353 ¹⁴⁶	14.62 ¹¹	18.732 ¹³⁴	28.66 ⁶⁶	61.757 ¹⁰¹	62.04 ²³⁷
Mean Place	30.125	14.17	14.862	28.82	58.594	58.37
Sec δ , Tan δ	1.105	+0.471	1.026	+0.230	1.044	-0.298
L. α , L. δ	+0.01	-0.1	+0.01	-0.1	-0.01	-0.1
ω α , ω δ	+0.01	+1.0	0.00	+1.0	0.00	+1.0
Authority and Catalogue No.	A. E.	408	A. E.	409	A. E.	411

No. 411 corrected for a parallax of 0".37. The reductions from α g. to brighter star vary during the year from -0".168, -1".87 to -0".160, -1".92.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Pictoris.		τ Argus.		θ Canis Majoris.	
	3.30	A 5	2.83	K 0	4.25	K 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ₀₆ ^m ₄₇	[°] ₆₁ ['] ₅₁	^h ₀₆ ^m ₄₈	[°] ₅₀ ['] ₃₁	^h ₀₆ ^m ₅₀	[°] ₁₁ ['] ₅₆
Jan. 1.0	^s _{29.78}	_{46.01}	^s _{10.495}	_{37.84}	^s _{51.094}	_{48.20}
11.0	_{29.77}	_{49.58} ³⁵⁷	_{10.525} ³⁰	_{41.28} ³⁴⁴	_{51.183} ⁸⁹	_{50.24} ²⁰⁴
21.0	_{29.66}	_{52.99} ³⁴¹	_{10.484} ⁴¹	_{44.56} ³²⁸	_{51.223} ⁴⁰	_{52.13} ¹⁸⁹
30.9	_{29.47}	_{56.14} ³¹⁵	_{10.375} ¹⁰⁹	_{47.57} ³⁰¹	_{51.215} ⁸	_{53.81} ¹⁶⁸
Feb. 9.9	_{29.19} ²⁸	_{58.94} ²⁸⁰	_{10.203} ¹⁷²	_{50.25} ²⁶⁸	_{51.160} ⁵⁵	_{55.25} ¹⁴⁴
19.9	_{28.85} ³⁴	_{61.34} ²⁴⁰	_{09.976} ²²⁷	_{52.52} ²²⁷	_{51.063} ⁹⁷	_{56.43} ¹¹⁸
29.8	_{28.45} ⁴⁰	_{63.27} ¹⁹³	_{09.704} ²⁷²	_{54.34} ¹⁸²	_{50.931} ¹³²	_{57.32} ⁸⁹
Mar. 10.8	_{28.01} ⁴⁴	_{64.70} ¹⁴³	_{09.398} ³⁰⁶	_{55.69} ¹³⁵	_{50.772} ¹⁵⁹	_{57.92} ⁶⁰
20.8	_{27.54} ⁴⁷	_{65.60} ⁹⁰	_{09.070} ³²⁸	_{56.53} ⁸⁴	_{50.596} ¹⁷⁶	_{58.24} ³²
30.8	_{27.05} ⁴⁹	_{65.97} ³⁷	_{08.732} ³³⁸	_{56.85} ³²	_{50.414} ¹⁸²	_{58.27} ³
Apr. 9.7	_{26.57} ⁴⁸	_{65.81} ¹⁶	_{08.398} ³³⁴	_{56.66} ¹⁹	_{50.234} ¹⁸⁰	_{58.01} ²⁶
19.7	_{26.11} ⁴⁶	_{65.11} ⁷⁰	_{08.078} ³²⁰	_{55.96} ⁷⁰	_{50.067} ¹⁶⁷	_{57.49} ⁵²
29.7	_{25.68} ⁴³	_{63.91} ¹²⁰	_{07.785} ²⁹³	_{54.78} ¹¹⁸	_{49.921} ¹⁴⁶	_{56.70} ⁷⁹
May 9.7	_{25.29} ³⁹	_{62.23} ¹⁶⁸	_{07.526} ²⁵⁹	_{53.14} ¹⁶⁴	_{49.801} ¹²⁰	_{55.67} ¹⁰³
19.6	_{24.96} ³³	_{60.11} ²¹²	_{07.308} ²¹⁸	_{51.08} ²⁰⁶	_{49.713} ⁸⁸	_{54.40} ¹²⁷
29.6	_{24.69} ²⁷	_{57.60} ²⁵¹	_{07.139} ¹⁶⁹	_{48.64} ²⁴⁴	_{49.661} ⁵²	_{52.93} ¹⁴⁷
June 8.6	_{24.48} ²¹	_{54.75} ²⁸⁵	_{07.023} ¹¹⁶	_{45.90} ²⁷⁴	_{49.646} ¹⁵	_{51.28} ¹⁶⁵
18.5	_{24.35} ¹³	_{51.64} ³¹¹	_{06.961} ⁶²	_{42.91} ²⁹⁹	_{49.670} ²⁴	_{49.50} ¹⁷⁸
28.5	_{24.30} ⁵	_{48.35} ³²⁹	_{06.956} ⁵	_{39.75} ³¹⁶	_{49.731} ⁶¹	_{47.62} ¹⁸⁸
July 8.5	_{24.32} ²	_{44.97} ³³⁸	_{07.008} ⁵²	_{36.50} ³²⁵	_{49.829} ⁹⁸	_{45.69} ¹⁹³
18.5	_{24.42} ¹⁰	_{41.59} ³³⁸	_{07.115} ¹⁰⁷	_{33.26} ³²⁴	_{49.960} ¹³¹	_{43.77} ¹⁹²
28.4	_{24.58} ¹⁶	_{38.30} ³²⁹	_{07.276} ¹⁶¹	_{30.12} ³¹⁴	_{50.123} ¹⁶³	_{41.93} ¹⁸⁴
Aug. 7.4	_{24.82} ²⁴	_{35.21} ³⁰⁹	_{07.488} ²¹²	_{27.18} ²⁹⁴	_{50.314} ¹⁹¹	_{40.21} ¹⁷²
17.4	_{25.13} ³¹	_{32.42} ²⁷⁹	_{07.745} ²⁵⁷	_{24.53} ²⁶⁵	_{50.530} ²¹⁶	_{38.68} ¹⁵³
27.4	_{25.50} ³⁷	_{30.01} ²⁴¹	_{08.044} ²⁹⁹	_{22.26} ²²⁷	_{50.769} ²³⁹	_{37.41} ¹²⁷
Sept. 6.3	_{25.92} ⁴²	_{28.09} ¹⁹²	_{08.377} ³³³	_{20.45} ¹⁸¹	_{51.026} ²⁵⁷	_{36.45} ⁹⁶
16.3	_{26.38} ⁴⁶	_{26.72} ¹³⁷	_{08.739} ³⁶²	_{19.19} ¹²⁶	_{51.299} ²⁷³	_{35.84} ⁶¹
26.3	_{26.87} ⁴⁹	_{25.97} ⁷⁵	_{09.122} ³⁸³	_{18.52} ⁶⁷	_{51.584} ²⁸⁵	_{35.62} ²²
Oct. 6.2	_{27.37} ⁵⁰	_{25.86} ¹¹	_{09.517} ³⁹⁵	_{18.48} ⁴	_{51.878} ²⁹⁴	_{35.80} ¹⁸
16.2	_{27.88} ⁵¹	_{26.42} ⁵⁶	_{09.915} ³⁹⁸	_{19.08} ⁶⁰	_{52.177} ²⁹⁹	_{36.39} ⁵⁹
26.2	_{28.38} ⁵⁰	_{27.63} ¹²¹	_{10.308} ³⁹³	_{20.31} ¹²³	_{52.475} ²⁹⁸	_{37.38} ⁹⁹
Nov. 5.2	_{28.85} ⁴⁷	_{29.45} ¹⁸²	_{10.682} ³⁷⁴	_{22.13} ¹⁸²	_{52.767} ²⁹²	_{38.72} ¹³⁴
15.1	_{29.27} ⁴²	_{31.83} ²³⁸	_{11.029} ³⁴⁷	_{24.47} ²³⁴	_{53.048} ²⁸¹	_{40.38} ¹⁶⁶
25.1	_{29.64} ³⁷	_{34.69} ²⁸⁶	_{11.339} ³¹⁰	_{27.27} ²⁸⁰	_{53.310} ²⁶²	_{42.28} ¹⁹⁰
Dec. 5.1	_{29.95} ³¹	_{37.91} ³²²	_{11.601} ²⁶²	_{30.41} ³¹⁴	_{53.547} ²³⁷	_{44.36} ²⁰⁸
15.1	_{30.17} ²²	_{41.39} ³⁴⁸	_{11.806} ²⁰⁵	_{33.79} ³³⁸	_{53.751} ²⁰⁴	_{46.53} ²¹⁷
25.0	_{30.30} ¹³	_{45.01} ³⁶²	_{11.948} ¹⁴²	_{37.30} ³⁵¹	_{53.917} ¹⁶⁶	_{48.72} ²¹⁹
35.0	_{30.35} ⁵	_{48.64} ³⁶³	_{12.023} ⁷⁵	_{40.81} ³⁵¹	_{54.038} ¹²¹	_{50.85} ²¹³
Mean Place	27.139	49.24	08.872	40.80	50.625	50.12
Sec δ , Tan δ	2.121	-1.870	1.573	-1.214	1.022	-0.212
L α , L δ	-0.05	-0.1	-0.03	-0.1	-0.01	-0.1
$\omega \alpha$, $\omega \delta$	-0.03	+1.0	-0.02	+1.0	0.00	+1.0
Authority and Catalogue No.	A. E.	417	A. N.	419	A. E.	422

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ϵ Canis Majoris. 1.63 B 1		22 Canis Majoris. 3.68 K 5		ζ Geminorum. Var. G o p	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
Mean Solar Date.	06 ^h 55 ^m	28 ^o 52 [']	06 ^h 58 ^m	27 ^o 49 [']	06 ^h 59 ^m	20 ^o 40 [']
Jan. 1.0	48.453 ⁷⁶	20.27 ²⁸⁴	51.697 ⁸¹	47.77 ²⁸¹	50.614 ¹²⁷	39.87 ¹⁵
11.0	48.529 ²⁴	23.11 ²⁶⁸	51.778 ²⁸	50.58 ²⁶⁵	50.741 ⁷⁶	39.72 ¹
21.0	48.553 ³⁰	25.79 ²⁴⁵	51.806 ²⁵	53.23 ²⁴³	50.817 ²³	39.71 ¹¹
30.9	48.523 ⁸¹	28.24 ²¹⁶	51.781 ⁷⁵	55.66 ²¹⁴	50.840 ²⁹	39.82 ²⁰
Feb. 9.9	48.442 ¹²⁵	30.40 ¹⁸¹	51.706 ¹²⁰	57.80 ¹⁸⁰	50.811 ⁷⁵	40.02 ²⁶
19.9	48.317 ¹⁶²	32.21 ¹⁴⁴	51.586 ¹⁵⁸	59.60 ¹⁴⁴	50.736 ¹¹⁵	40.28 ³¹
29.9	48.155 ¹⁹¹	33.65 ¹⁰⁴	51.428 ¹⁸⁷	61.04 ¹⁰⁵	50.621 ¹⁴⁷	40.59 ³³
Mar. 10.8	47.964 ²¹⁰	34.69 ⁶⁴	51.241 ²⁰⁶	62.09 ⁶⁵	50.474 ¹⁶⁶	40.92 ³¹
20.8	47.754 ²¹⁹	35.33 ²³	51.035 ²¹⁴	62.74 ²⁴	50.308 ¹⁷⁶	41.23 ²⁸
30.8	47.535 ²¹⁶	35.56 ¹⁹	50.821 ²¹³	62.98 ¹⁵	50.132 ¹⁷⁴	41.51 ²⁴
Apr. 9.7	47.319 ²⁰⁴	35.37 ⁵⁹	50.608 ²⁰²	62.83 ⁵⁶	49.958 ¹⁶³	41.75 ²⁰
19.7	47.115 ¹⁸⁵	34.78 ⁹⁷	50.406 ¹⁸²	62.27 ⁹⁴	49.795 ¹⁴¹	41.95 ¹⁶
29.7	46.930 ¹⁵⁷	33.81 ¹³⁴	50.224 ¹⁵⁵	61.33 ¹²⁹	49.654 ¹¹⁴	42.11 ¹²
May 9.7	46.773 ¹²⁴	32.47 ¹⁶⁷	50.069 ¹²³	60.04 ⁶³	49.540 ⁷⁸	42.23 ¹⁰
19.6	46.649 ⁸⁷	30.80 ¹⁹⁷	49.946 ⁸⁷	58.41 ¹⁹²	49.462 ⁴⁰	42.33 ⁹
29.6	46.562 ⁴⁷	28.83 ²²²	49.859 ⁴⁷	56.45 ²¹⁸	49.422 ¹	42.42 ⁸
June 8.6	46.515 ⁶	26.61 ²⁴³	49.812 ⁷	54.31 ¹³⁸	49.421 ⁴⁰	42.50 ⁹
18.6	46.509 ³⁶	24.18 ²⁵⁶	49.805 ³⁴	51.93 ²⁵¹	49.461 ⁸⁰	42.59 ⁹
28.5	46.545 ⁷⁵	21.62 ²⁶⁴	49.839 ⁷⁴	49.42 ²⁶⁰	49.541 ¹¹⁸	42.68 ⁹
July 8.5	46.620 ¹¹⁵	18.98 ²⁶⁴	49.913 ¹¹¹	46.82 ²⁵⁹	49.659 ¹⁵²	42.77 ⁹
18.5	46.735 ¹⁵¹	16.34 ²⁵⁵	50.024 ¹⁴⁹	44.23 ²⁵¹	49.811 ¹⁸⁵	42.86 ⁷
28.4	46.886 ¹⁸⁵	13.79 ²³⁹	50.173 ¹⁸²	41.72 ²³⁵	49.996 ²¹⁴	42.93 ⁵
Aug. 7.4	47.071 ²¹⁶	11.40 ²¹⁵	50.355 ²¹²	39.37 ²¹²	50.210 ²³⁹	42.98 ⁶
17.4	47.287 ²⁴³	09.25 ¹⁸³	50.567 ²⁴⁰	37.25 ¹⁸⁰	50.449 ²⁶¹	42.92 ¹⁴
27.4	47.530 ²⁶⁷	07.42 ¹⁴³	50.807 ²⁶³	35.45 ¹⁴²	50.710 ²⁸¹	42.78 ²³
Sept. 6.3	47.797 ²⁸⁶	05.99 ⁹⁸	51.070 ²⁸³	34.03 ⁹⁸	50.991 ²⁹⁷	42.55 ³³
16.3	48.083 ³⁰²	05.01 ⁴⁹	51.353 ³⁰⁰	33.05 ⁴⁸	51.288 ³⁰⁹	42.22 ¹³
26.3	48.385 ³¹²	04.52 ⁵	51.653 ³¹⁰	32.57 ⁴	51.597 ³²⁰	41.79 ⁵¹
Oct. 6.3	48.697 ³¹⁸	04.57 ⁵⁸	51.963 ³¹⁶	32.61 ⁵⁷	51.917 ³²⁶	41.28 ⁵⁹
16.2	49.015 ³¹⁷	05.15 ¹¹⁰	52.279 ³¹⁶	33.18 ¹⁰⁸	52.243 ³²⁹	40.69 ⁶³
26.2	49.332 ³⁰⁹	06.25 ¹⁶⁰	52.595 ³⁰⁹	34.26 ¹⁵⁷	52.572 ³¹⁶	40.06 ⁶⁵
Nov. 5.2	49.641 ²⁹⁴	07.85 ²⁰⁴	52.904 ²⁹⁵	35.83 ²⁰¹	52.898 ³⁰¹	39.41 ⁶³
15.1	49.935 ²⁷³	09.89 ²³⁹	53.199 ²⁷⁴	37.84 ²³⁶	53.214 ²⁷⁷	38.78 ⁵⁷
25.1	50.208 ²⁴²	12.28 ²⁶⁸	53.473 ²⁴⁵	40.20 ²⁶⁴	53.515 ²⁴⁶	37.72 ⁴⁹
Dec. 5.1	50.450 ²⁰⁵	14.96 ²⁸⁵	53.718 ²⁰⁷	42.84 ²⁸¹	53.792 ²⁰⁷	37.35 ³⁷
15.1	50.655 ¹⁶⁰	17.81 ²⁹³	53.925 ¹⁶⁵	45.65 ²⁸⁹	54.038 ¹⁶¹	37.12 ²³
25.0	50.815 ¹¹¹	20.74 ²⁹²	54.090 ¹¹⁵	48.55 ²⁹⁰	54.245 ¹¹¹	
35.0	50.926 ¹¹¹	23.66 ²⁹²	54.205 ¹¹⁵	51.44 ²⁸⁹	54.406 ¹¹¹	
Mean Place	47.689	23.08	50.960	50.75	50.320	38.75
Sec δ , Tan δ	1.142	-0.551	1.131	-0.528	1.069	+0.377
L α , L δ	-0.01	-0.1	-0.01	-0.1	+0.01	-0.1
ω α ; ω δ	-0.01	+1.0	-0.01	+1.0	+0.01	+1.0
Authority and Catalogue No.	A. E.	426		427	A. E.	428

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α^2 Canis Majoris.		γ Canis Majoris.		δ Canis Majoris.	
	3·12	B 5 p	4·07	B 5	1·98	F 8 p
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 06 ^m 59	[°] 23 ['] 43	^h 07 ^m 00	[°] 15 ['] 31	^h 07 ^m 05	[°] 26 ['] 16
Jan. 1·0	61·656 ^s 88	34·45 ["] 264	30·508 ^s 96	29·92 ["] 226	28·453 ^s 90	36·79 ["] 277
11·0	61·744 ^s 35	37·09 ["] 248	30·604 ^s 46	32·18 ["] 210	28·543 ^s 38	39·56 ["] 262
21·0	61·779 ^s 16	39·57 ["] 227	30·650 ^s 4	34·28 ["] 190	28·581 ^s 15	42·18 ["] 240
30·9	61·763 ^s 66	41·84 ["] 199	30·646 ^s 51	36·18 ["] 165	28·566 ^s 66	44·58 ["] 212
Feb. 9·9	61·697 ^s 109	43·83 ["] 167	30·595 ^s 95	37·83 ["] 136	28·500 ^s 110	46·70 ["] 179
19·9	61·588 ^s 147	45·50 ["] 132	30·500 ^s 131	39·19 ["] 106	28·390 ^s 149	48·49 ["] 144
29·9	61·441 ^s 175	46·82 ["] 96	30·369 ^s 159	40·25 ["] 75	28·241 ^s 179	49·93 ["] 107
Mar. 10·8	61·266 ^s 194	47·78 ["] 59	30·210 ^s 177	41·00 ["] 43	28·062 ^s 199	51·00 ["] 67
20·8	61·072 ^s 203	48·37 ["] 21	30·033 ^s 186	41·43 ["] 12	27·863 ^s 208	51·67 ["] 28
30·8	60·869 ^s 201	48·58 ["] 17	29·847 ^s 185	41·55 ["] 19	27·655 ^s 208	51·95 ["] 11
Apr. 9·7	60·668 ^s 190	48·41 ["] 53	29·662 ^s 174	41·36 ["] 50	27·447 ^s 198	51·84 ["] 50
19·7	60·478 ^s 172	47·88 ["] 88	29·488 ^s 155	40·86 ["] 79	27·249 ^s 180	51·34 ["] 87
29·7	60·306 ^s 145	47·00 ["] 122	29·333 ^s 129	40·07 ["] 107	27·069 ^s 154	50·47 ["] 122
May 9·7	60·161 ^s 114	45·78 ["] 153	29·204 ^s 99	39·00 ["] 132	26·915 ^s 123	49·25 ["] 154
19·6	60·047 ^s 77	44·25 ["] 180	29·105 ^s 63	37·68 ["] 154	26·792 ^s 88	47·71 ["] 183
29·6	59·970 ^s 39	42·45 ["] 204	29·042 ^s 27	36·14 ["] 174	26·704 ^s 49	45·88 ["] 209
June 8·6	59·931 ^s 1	40·41 ["] 223	29·015 ^s 11	34·40 ["] 190	26·655 ^s 9	43·79 ["] 228
18·6	59·930 ^s 38	38·18 ["] 235	29·026 ^s 49	32·50 ["] 201	26·646 ^s 29	41·51 ["] 243
28·5	59·968 ^s 77	35·83 ["] 243	29·075 ^s 86	30·49 ["] 206	26·675 ^s 69	39·08 ["] 250
July 8·5	60·045 ^s 115	33·40 ["] 242	29·161 ^s 120	28·43 ["] 207	26·744 ^s 107	36·58 ["] 252
18·5	60·160 ^s 148	30·98 ["] 236	29·281 ^s 152	26·36 ["] 201	26·851 ^s 143	34·06 ["] 244
28·4	60·308 ^s 180	28·62 ["] 220	29·433 ^s 182	24·35 ["] 186	26·994 ^s 176	31·62 ["] 230
Aug. 7·4	60·488 ^s 210	26·42 ["] 198	29·615 ^s 209	22·49 ["] 166	27·170 ^s 206	29·32 ["] 208
17·4	60·698 ^s 237	24·44 ["] 166	29·824 ^s 233	20·83 ["] 140	27·376 ^s 233	27·24 ["] 177
27·4	60·935 ^s 259	22·78 ["] 133	30·057 ^s 253	19·43 ["] 108	27·609 ^s 257	25·47 ["] 140
Sept. 6·3	61·194 ^s 276	21·45 ["] 89	30·310 ^s 271	18·35 ["] 71	27·866 ^s 278	24·07 ["] 97
16·3	61·470 ^s 292	20·56 ["] 42	30·581 ^s 284	17·64 ["] 29	28·144 ^s 295	23·10 ["] 50
26·3	61·762 ^s 304	20·14 ["] 7	30·865 ^s 295	17·35 ["] 14	28·439 ^s 306	22·60 ["] 2
Oct. 6·3	62·066 ^s 309	20·21 ["] 57	31·160 ^s 301	17·49 ["] 58	28·745 ^s 313	22·62 ["] 54
16·2	62·375 ^s 310	20·78 ["] 106	31·461 ^s 303	18·07 ["] 100	29·058 ^s 315	23·16 ["] 105
26·2	62·685 ^s 304	21·84 ["] 151	31·764 ^s 297	19·07 ["] 140	29·373 ^s 308	24·21 ["] 152
Nov. 5·2	62·989 ^s 292	23·35 ["] 192	32·061 ^s 287	20·47 ["] 174	29·681 ^s 297	25·73 ["] 196
15·1	63·281 ^s 271	25·27 ["] 226	32·348 ^s 270	22·21 ["] 202	29·978 ^s 278	27·69 ["] 231
25·1	63·552 ^s 244	27·53 ["] 250	32·618 ^s 244	24·23 ["] 223	30·256 ^s 250	30·00 ["] 258
Dec. 5·1	63·796 ^s 209	30·03 ["] 268	32·862 ^s 210	26·46 ["] 234	30·506 ^s 214	32·58 ["] 277
15·1	64·005 ^s 168	32·71 ["] 273	33·072 ^s 173	28·80 ["] 238	30·720 ^s 172	35·35 ["] 285
25·0	64·173 ^s 120	35·44 ["] 272	33·245 ^s 128	31·18 ["] 235	30·892 ^s 124	38·20 ["] 282
35·0	64·293 ^s	38·16 ["]	33·373 ^s	33·53 ["]	31·016 ^s	41·02 ["]
Mean Place	61·010	37·32	29·999	32·43	27·760	40·12
Sec δ , Tan δ	1·092	-0·440	1·038	-0·278	1·115	-0·494
L α , L δ	-0·01	-0·1	-0·01	-0·1	-0·01	-0·1
ω α , ω δ	-0·01	+1·0	0·00	+1·0	-0·01	+1·0
Authority and Catalogue No.	A. N.	429	A. E.	430	A. E.	433

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	51 Geminorum.		π Argus.		δ Geminorum.	
	5·31	M b	2·74	K 5	3·52	F o
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 07 09	^m 16 16'	^h 07 14	^m 36 57'	^h 07 15	^m 22 06'
Jan. 1·0	14·477 ^s	58° 53'	36·879 ^s	56° 97'	49·686 ^s	59° 93'
11·0	14·611 ¹³⁴	58·08 45	36·968 ⁸⁹	60·16 319	49·832 ¹⁴⁶	59·82 11
21·0	14·693 ⁸²	57·77 31	36·999 ³¹	63·22 306	49·926 ⁹⁴	59·86 4
30·9	14·723 ³⁰	57·60 17	36·971 ²⁸	66·07 285	49·965 ³⁹	60·03 17
Feb. 9·9	14·702 ²¹	57·56 4	36·888 ⁸³	68·63 256	49·951 ¹⁴	60·31 28
19·9	14·636 ⁶⁶	57·62 6	36·756 ¹³²	70·84 221	49·889 ⁶²	60·67 36
29·9	14·529 ¹⁰⁷	57·77 15	36·581 ¹⁷⁵	72·66 182	49·784 ¹⁰⁵	61·08 41
Mar. 10·8	14·390 ¹³⁹	57·97 20	36·372 ²⁰⁹	74·06 140	49·646 ¹³⁸	61·49 41
20·8	14·231 ¹⁵⁹	58·21 24	36·141 ²³¹	75·02 96	49·484 ¹⁶²	61·89 40
30·8	14·060 ¹⁷¹	58·47 26	35·897 ²⁴⁴	75·52 50	49·310 ¹⁷⁴	62·24 35
Apr. 9·8	13·891 ¹⁶⁹	58·74 27	35·651 ²⁴⁶	75·57 5	49·135 ¹⁷⁵	62·55 31
19·7	13·731 ¹⁶⁰	59·01 27	35·414 ²³⁷	75·16 41	48·968 ¹⁶⁷	62·79 24
29·7	13·590 ¹⁴¹	59·27 26	35·195 ²¹⁹	74·31 85	48·820 ¹⁴⁸	62·97 18
May 9·7	13·476 ¹¹⁴	59·53 26	35·001 ¹⁹⁴	73·06 25	48·699 ¹²¹	63·09 12
19·6	13·394 ⁸²	59·81 28	34·839 ¹⁶²	71·42 164	48·610 ⁸⁹	63·17 8
29·6	13·348 ⁴⁶	60·09 28	34·714 ¹²⁵	69·42 200	48·558 ⁵²	63·21 4
June 8·6	13·339 ⁹	60·39 30	34·629 ⁸⁵	67·13 229	48·544 ¹⁴	63·22 1
18·6	13·369 ³⁰	60·70 31	34·586 ⁴³	64·59 254	48·570 ²⁶	63·21 1
28·5	13·437 ⁶⁸	61·03 33	34·586 ⁴⁵	61·86 273	48·636 ⁶⁶	63·19 2
July 8·5	13·542 ¹⁰⁵	61·35 32	34·631 ⁴⁵	59·02 284	48·739 ¹⁰³	63·15 4
18·5	13·680 ¹³⁸	61·67 32	34·718 ⁸⁷	56·16 286	48·877 ¹³⁸	63·10 5
28·5	13·850 ¹⁷⁰	61·96 29	34·846 ¹²⁸	53·35 281	49·049 ¹⁷²	63·02 8
Aug. 7·4	14·050 ²⁰⁰	62·19 23	35·014 ¹⁶⁸	50·68 267	49·251 ²⁰²	62·91 11
17·4	14·274 ²²⁴	62·36 17	35·218 ²⁰⁴	48·25 243	49·479 ²²⁸	62·75 16
27·4	14·521 ²⁴⁷	62·43 7	35·455 ²³⁷	46·13 212	49·731 ²⁵²	62·53 22
Sept. 6·3	14·787 ²⁶⁶	62·39 4	35·722 ²⁶⁷	44·41 172	50·004 ²⁷³	62·23 30
16·3	15·071 ²⁸⁴	62·22 17	36·015 ²⁹³	43·16 125	50·296 ²⁹²	61·85 38
26·3	15·370 ²⁹⁹	61·91 31	36·328 ³¹³	42·44 72	50·603 ³⁰⁷	61·38 47
Oct. 6·3	15·680 ³¹⁰	61·44 47	36·657 ³²⁹	42·29 15	50·923 ³²⁰	60·83 55
16·2	15·998 ³¹⁸	60·85 59	36·995 ³³⁸	42·72 43	51·252 ³²⁹	60·20 63
26·2	16·319 ³²¹	60·14 71	37·336 ³⁴¹	43·72 100	51·585 ³³³	59·51 69
Nov. 5·2	16·640 ³²¹	59·34 80	37·670 ³³⁴	45·28 156	51·918 ³³³	58·79 72
15·2	16·953 ³¹³	58·49 85	37·991 ³²¹	47·34 206	52·246 ³²⁸	58·07 72
25·1	17·251 ²⁹⁸	57·62 87	38·289 ²⁹⁸	49·83 249	52·560 ³¹⁴	57·40 67
Dec. 5·1	17·528 ²⁷⁷	56·77 85	38·555 ²⁶⁶	52·66 283	52·852 ²⁹²	56·80 60
15·1	17·776 ²⁴⁸	56·00 77	38·782 ²²⁷	55·73 307	53·114 ²⁶²	56·30 50
25·0	17·986 ²¹⁰	55·32 68	38·962 ¹⁸⁰	58·94 321	53·339 ²²⁵	55·94 36
35·0	18·152 ¹⁶⁶	54·77 55	39·088 ¹²⁶	62·18 324	53·519 ¹⁸⁰	55·72 22
Mean Place	14·191	57·27	35·919	61·58	49·399	58·98
Sec δ, Tan δ	1·042	+0·292	1·252	-0·753	1·079	+0·406
L α, L δ	+0·01	-0·1	-0·02	-0·1	+0·01	-0·1
ω α, ω δ	+0·01	+1·0	-0·02	+0·9	+0·01	+0·9
Authority and Catalogue No.	439		A. E. 445		A. E. 447	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Volantis.		η Canis Majoris.		β Canis Minoris.	
	4.02	F 5	2.43	B 5 p	3.09	B 8
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 07 16 ^m	[°] 67 49 [']	^h 07 21 ^m	[°] 29 09 [']	^h 07 23 ^m	[°] 8 26 [']
Jan. 1.0	55.72 ^s	24.83 ["]	15.460 ^s	37.61 ["]	15.043 ^s	10.57 ["]
11.0	55.74 ²	28.52 ³⁶⁹	15.565 ¹⁰⁵	40.54 ²⁹³	15.183 ¹⁴⁰	09.58 ⁹⁹
21.0	55.65 ⁹	32.13 ³⁶¹	15.616 ⁵¹	43.33 ²⁷⁹	15.273 ⁹⁰	08.75 ⁸³
30.9	55.46 ¹⁹	35.55 ³⁴²	15.612 ⁴	45.93 ²⁶⁰	15.312 ³⁹	08.08 ⁶⁷
Feb. 7.9	55.15 ³¹	38.69 ³¹⁴	15.556 ⁵⁶	48.26 ²³³	15.302 ¹⁰	07.58 ⁵⁰
19.9	54.75 ⁴⁰	41.47 ²⁷⁸	15.453 ¹⁰³	50.27 ²⁰¹	15.246 ⁵⁶	07.25 ³³
29.9	54.28 ⁴⁷	43.83 ²³⁶	15.308 ¹⁴⁵	51.92 ¹⁶⁵	15.150 ⁹⁶	07.07 ¹⁸
Mar. 10.8	53.75 ⁵³	45.72 ¹⁸⁹	15.131 ¹⁷⁷	53.19 ¹²⁷	15.021 ¹²⁹	07.02 ⁵
20.8	53.17 ⁵⁸	47.12 ¹⁴⁰	14.932 ¹⁹⁹	54.05 ⁸⁶	14.870 ¹⁵¹	07.08 ⁶
30.8	52.56 ⁶¹	47.99 ⁸⁷	14.720 ²¹²	54.51 ⁴⁶	14.707 ¹⁶³	07.25 ¹⁷
Apr. 9.8	51.95 ⁶¹	48.32 ³³	14.505 ²¹⁵	54.56 ⁵	14.541 ¹⁶⁶	07.51 ²⁶
19.7	51.35 ⁶⁰	48.12 ²⁰	14.298 ²⁰⁷	54.21 ³⁵	14.384 ¹⁵⁷	07.84 ³³
29.7	50.77 ⁵⁸	47.38 ⁷⁴	14.106 ¹⁹²	53.46 ⁷⁵	14.241 ¹⁴³	08.24 ⁴⁰
May 9.7	50.23 ⁵⁴	46.14 ¹²⁴	13.938 ¹⁶⁸	52.34 ¹¹²	14.123 ¹¹⁸	08.71 ⁴⁷
19.6	49.75 ⁴⁸	44.42 ¹⁷²	13.799 ¹³⁹	50.87 ¹⁴⁷	14.033 ⁹⁰	09.25 ⁵⁴
29.6	49.33 ⁴²	42.27 ²¹⁵	13.693 ¹⁰⁶	49.08 ¹⁷⁹	13.976 ⁵⁷	09.85 ⁶⁰
June 8.6	48.99 ³⁴	39.73 ²⁵⁴	13.625 ⁶⁸	47.02 ²⁰⁶	13.954 ²²	10.50 ⁶⁵
18.6	48.73 ²⁶	36.87 ²⁸⁶	13.596 ²⁹	44.74 ²²⁸	13.969 ¹⁵	11.20 ⁷⁰
28.5	48.56 ¹⁷	33.76 ³¹¹	13.606 ¹⁰	42.28 ²⁴⁶	14.020 ⁵¹	11.93 ⁷³
July 8.5	48.49 ⁷	30.49 ³²⁷	13.655 ⁴⁹	39.74 ²⁵⁴	14.105 ⁸⁵	12.67 ⁷⁴
18.5	48.51 ²	27.14 ³³⁵	13.743 ⁸⁸	37.15 ²⁵⁹	14.224 ¹¹⁹	13.39 ⁷²
28.5	48.63 ¹²	23.81 ³³³	13.868 ¹²⁵	34.63 ²⁵²	14.373 ¹⁴⁹	14.07 ⁶⁸
Aug. 7.4	48.84 ²¹	20.61 ³²⁰	14.029 ¹⁶¹	32.21 ²⁴²	14.551 ¹⁷⁸	14.68 ⁶¹
17.4	49.14 ³⁰	17.65 ²⁹⁶	14.221 ¹⁹²	30.02 ²¹⁹	14.755 ²⁰⁴	15.18 ⁵⁰
27.4	49.52 ³⁸	15.01 ²⁶⁴	14.443 ²²²	28.12 ¹⁹⁰	14.982 ²²⁷	15.55 ³⁷
Sept. 6.3	49.98 ⁴⁶	12.79 ²²²	14.693 ²⁵⁰	26.59 ¹⁵³	15.230 ²⁴⁸	15.75 ²⁰
16.3	50.50 ⁵²	11.09 ¹⁷⁰	14.967 ²⁷⁴	25.49 ¹¹⁰	15.496 ²⁶⁶	15.75 ²²
26.3	51.07 ⁵⁷	09.97 ¹¹²	15.259 ²⁹²	24.87 ⁶²	15.778 ²⁸²	15.53 ²²
Oct. 6.3	51.67 ⁶⁰	09.48 ⁴⁹	15.567 ³⁰⁸	24.77 ¹⁰	16.074 ²⁹⁶	15.09 ⁴⁴
16.2	52.29 ⁶²	09.66 ¹⁸	15.886 ³¹⁹	25.20 ⁴³	16.380 ³⁰⁶	14.44 ⁶⁵
26.2	52.90 ⁶¹	10.50 ⁸⁴	16.208 ³²²	26.18 ⁹⁸	16.691 ³¹¹	13.59 ⁸⁵
Nov. 5.2	53.49 ⁵⁹	11.99 ¹⁴⁹	16.528 ³²⁰	27.66 ¹⁴⁸	17.003 ³¹²	12.57 ¹⁰²
15.2	54.04 ⁵⁵	14.07 ²⁰⁸	16.838 ³¹⁰	29.59 ¹⁹³	17.311 ³⁰⁸	11.41 ¹¹⁶
25.1	54.53 ⁴⁹	16.69 ²⁶²	17.129 ²⁹¹	31.92 ²³³	17.606 ²⁹⁵	10.16 ¹²⁵
Dec 5.1	54.94 ⁴¹	19.75 ³⁰⁶	17.394 ²⁶⁵	34.55 ²⁶³	17.881 ²⁷⁵	08.88 ¹²⁸
15.1	55.26 ³²	23.13 ³³⁸	17.624 ²³⁰	37.39 ²⁸⁴	18.129 ²⁴⁸	07.62 ¹²⁶
25.0	55.47 ²¹	26.74 ³⁶¹	17.810 ¹⁸⁶	40.36 ²⁹⁷	18.342 ²¹³	06.42 ¹²⁰
35.0	55.57 ¹⁰	30.45 ³⁷¹	17.949 ¹³⁹	43.34 ²⁹⁸	18.513 ¹⁷¹	05.34 ¹⁰⁸
Mean Place	52.252	31.40	14.730	42.17	14.757	08.77
Sec δ , Tan δ	2.650	-2.454	1.145	-0.558	1.011	+0.148
L. a, L. δ	-0.06	-0.1	-0.01	-0.1	0.00	-0.1
ω a, ω δ	-0.05	+0.9	-0.01	+0.9	0.00	+0.9
Authority and Catalogue No.	A. E.	449	A. N.	452	A. E.	453

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Argus.		α^2 Geminorum.		β Carinae.	
	3.28	K 5	1.99	A 0	4.92	K 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 07 26	^m 43 08	^h 07 29	^m 32 02	^h 07 33	^m 52 22
Jan. 1.0	57.854 ^s	71.32 ["]	60.809 ^s	53.29 ["]	54.469 ^s	13.74 ["]
11.0	57.951 ^s	74.71 ["]	60.979 ^s	53.76 ["]	54.565 ^s	17.35 ["]
21.0	57.986 ^s	78.01 ["]	61.094 ^s	54.38 ["]	54.588 ^s	20.88 ["]
31.0	57.957 ^s	81.11 ["]	61.154 ^s	55.12 ["]	54.539 ^s	24.25 ["]
Feb. 9.9	57.867 ^s	83.93 ["]	61.153 ^s	55.96 ["]	54.419 ^s	27.35 ["]
19.9	57.724 ^s	86.42 ["]	61.099 ^s	56.83 ["]	54.234 ^s	30.12 ["]
29.9	57.533 ^s	88.51 ["]	60.993 ^s	57.72 ["]	53.995 ^s	32.49 ["]
Mar. 10.8	57.305 ^s	90.17 ["]	60.850 ^s	58.52 ["]	53.712 ^s	34.40 ["]
20.8	57.050 ^s	91.37 ["]	60.680 ^s	59.21 ["]	53.396 ^s	35.85 ["]
30.8	56.779 ^s	92.10 ["]	60.493 ^s	59.77 ["]	53.061 ^s	36.81 ["]
Apr. 9.8	56.503 ^s	92.35 ["]	60.305 ^s	60.17 ["]	52.717 ^s	37.25 ["]
19.7	56.234 ^s	92.10 ["]	60.121 ^s	60.43 ["]	52.377 ^s	37.17 ["]
29.7	55.980 ^s	91.40 ["]	59.953 ^s	60.52 ["]	52.053 ^s	36.59 ["]
May 9.7	55.751 ^s	90.24 ["]	59.809 ^s	60.44 ["]	51.754 ^s	35.51 ["]
19.7	55.553 ^s	88.65 ["]	59.703 ^s	60.24 ["]	51.489 ^s	33.98 ["]
29.6	55.392 ^s	86.68 ["]	59.633 ^s	59.88 ["]	51.265 ^s	32.01 ["]
June 8.6	55.272 ^s	84.37 ["]	59.600 ^s	59.43 ["]	51.086 ^s	29.67 ["]
18.6	55.196 ^s	81.77 ["]	59.612 ^s	58.90 ["]	50.958 ^s	27.01 ["]
28.5	55.167 ^s	78.96 ["]	59.668 ^s	58.29 ["]	50.884 ^s	24.10 ["]
July 8.5	55.185 ^s	76.01 ["]	59.763 ^s	57.64 ["]	50.866 ^s	21.00 ["]
18.5	55.249 ^s	73.00 ["]	59.895 ^s	56.95 ["]	50.904 ^s	17.83 ["]
28.5	55.359 ^s	70.01 ["]	60.068 ^s	56.25 ["]	50.999 ^s	14.66 ["]
Aug. 7.4	55.514 ^s	67.15 ["]	60.270 ^s	55.52 ["]	51.149 ^s	11.61 ["]
17.4	55.711 ^s	64.52 ["]	60.506 ^s	54.76 ["]	51.351 ^s	08.75 ["]
27.4	55.947 ^s	62.19 ["]	60.769 ^s	53.97 ["]	51.603 ^s	06.20 ["]
Sept. 6.4	56.218 ^s	60.26 ["]	61.056 ^s	53.19 ["]	51.901 ^s	04.05 ["]
16.3	56.520 ^s	58.80 ["]	61.365 ^s	52.38 ["]	52.239 ^s	02.38 ["]
26.3	56.849 ^s	57.89 ["]	61.692 ^s	51.61 ["]	52.611 ^s	01.25 ["]
Oct. 6.3	57.197 ^s	57.55 ["]	62.038 ^s	50.82 ["]	53.008 ^s	00.74 ["]
16.2	57.557 ^s	57.83 ["]	62.394 ^s	50.05 ["]	53.419 ^s	00.87 ["]
26.2	57.922 ^s	58.71 ["]	62.759 ^s	49.34 ["]	53.837 ^s	01.64 ["]
Nov. 5.2	58.281 ^s	60.20 ["]	63.124 ^s	48.69 ["]	54.250 ^s	03.04 ["]
15.2	58.628 ^s	62.22 ["]	63.485 ^s	48.15 ["]	54.645 ^s	05.02 ["]
25.1	58.951 ^s	64.71 ["]	63.833 ^s	47.75 ["]	55.013 ^s	07.53 ["]
Dec. 5.1	59.241 ^s	67.60 ["]	64.162 ^s	47.50 ["]	55.338 ^s	10.48 ["]
15.1	59.487 ^s	70.77 ["]	64.461 ^s	47.45 ["]	55.612 ^s	13.76 ["]
25.1	59.682 ^s	74.13 ["]	64.720 ^s	47.58 ["]	55.824 ^s	17.26 ["]
35.0	59.820 ^s	77.55 ["]	64.928 ^s	47.93 ["]	55.968 ^s	20.88 ["]
Mean Place	56.695	77.36	60.406	51.56	52.850	21.08
Sec δ , Tan δ	1.371	-0.938	1.180	+0.626	1.638	-1.297
L α , L δ	-0.02	-0.1	+0.02	-0.2	-0.03	-0.2
ω α , ω δ	-0.02	+0.9	+0.02	+0.9	-0.03	+0.9
Authority and Catalogue No.	457		A. E.		463	

No. 458. The reductions from α g. to brighter star (α^2) vary during the year from +05.073, +1".55 to +05.070, +1".53.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Canis Min. (<i>Brighter Star</i>)		26 Monocerotis.		β Geminorum.	
	o.48	F 5	4.07	K o	1.21	K o
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 07 ^m 35	^o 5 ['] 24	^h 07 ^m 37	^o 9 ['] 22	^h 07 ^m 40	^o 28 ['] 11
Jan. 1.0	32.308 ^s	41.11 ^a	48.765 ^s	51.64 ^a	55.000 ^s	65.64 ^a
11.0	32.454 ¹⁴⁶	39.86 ¹²⁵	48.903 ¹³⁸	53.69 ²⁰⁵	55.179 ¹⁷⁹	65.82 ¹⁸
21.0	32.548 ⁹⁴	38.78 ¹⁰⁸	48.992 ⁸⁹	55.61 ¹⁹²	55.303 ¹²⁴	66.17 ³⁵
31.0	32.593 ⁴⁵	37.88 ⁹⁰	49.031 ³⁹	57.34 ¹⁷³	55.371 ⁶⁸	66.68 ⁵¹
Feb. 9.9	32.587 ⁶	37.17 ⁷¹	49.020 ¹¹	58.85 ¹⁵¹	55.382 ¹¹	67.30 ⁶²
19.9	32.536 ⁵¹	36.62 ⁵⁵	48.964 ⁵⁶	60.12 ¹²⁷	55.339 ⁴³	68.00 ⁷⁰
29.9	32.445 ⁹¹	36.30 ³²	48.867 ⁹⁷	61.11 ⁹⁹	55.248 ⁹¹	68.73 ⁷³
Mar. 10.8	32.320 ¹²⁵	36.12 ¹⁸	48.738 ¹²⁹	61.84 ⁷³	55.118 ¹³⁰	69.45 ⁷²
20.8	32.172 ¹⁴⁸	36.07 ⁵	48.585 ¹⁵³	62.30 ⁴⁶	54.960 ¹⁵⁸	70.10 ⁶⁵
30.8	32.010 ¹⁶²	36.18 ¹¹	48.418 ¹⁶⁷	62.51 ²¹	54.784 ¹⁷⁶	70.67 ⁵⁷
Apr. 9.8	31.847 ¹⁶³	36.39 ²¹	48.247 ¹⁷¹	62.45 ⁶	54.601 ¹⁸³	71.12 ⁴⁵
19.7	31.690 ¹⁵⁷	36.71 ³²	48.080 ¹⁶⁷	62.15 ³⁰	54.424 ¹⁷⁷	71.45 ³³
29.7	31.544 ¹⁴⁶	37.11 ⁴⁰	47.926 ¹⁵⁴	61.60 ⁵⁵	54.260 ¹⁶⁴	71.65 ²⁰
May 9.7	31.422 ¹²²	37.64 ⁵³	47.792 ¹³⁴	60.83 ⁷⁷	54.121 ¹³⁹	71.71 ⁶
19.7	31.329 ⁹³	38.25 ⁶¹	47.685 ¹⁰⁷	59.85 ⁹⁸	54.011 ¹¹⁰	71.66 ⁵
29.6	31.264 ⁶⁵	38.91 ⁶⁶	47.608 ⁷⁷	58.68 ¹¹⁷	53.936 ⁷⁵	71.50 ¹⁶
June 8.6	31.233 ³¹	39.65 ⁷⁴	47.563 ⁴⁵	57.33 ¹³⁵	53.899 ³⁷	71.25 ²⁵
18.6	31.236 ³	40.45 ⁸⁰	47.551 ¹²	55.85 ¹⁴⁸	53.901 ²	70.92 ³³
28.5	31.277 ⁴¹	41.28 ⁸³	47.574 ²³	54.27 ¹⁵⁸	53.943 ⁴²	70.53 ³⁹
July 8.5	31.350 ⁷³	42.10 ⁸²	47.631 ⁵⁷	52.63 ¹⁶⁴	54.024 ⁸¹	70.08 ⁴⁵
18.5	31.457 ¹⁰⁷	42.91 ⁸¹	47.721 ⁹⁰	50.97 ¹⁶⁶	54.142 ¹¹⁸	69.59 ⁴⁹
28.5	31.504 ¹³⁷	43.69 ⁷⁸	47.843 ¹²²	49.36 ¹⁶¹	54.295 ¹⁵³	69.06 ⁵³
Aug 7.4	31.759 ¹⁶⁵	44.40 ⁷¹	47.994 ¹⁵¹	47.85 ¹⁵¹	54.481 ¹⁸⁶	68.48 ⁵⁸
17.4	31.953 ¹⁹⁴	44.98 ⁵⁸	48.173 ¹⁷⁹	46.49 ¹³⁶	54.696 ²¹⁵	67.86 ⁶²
27.4	32.171 ²¹⁸	45.38 ⁴⁰	48.377 ²⁰⁴	45.35 ¹¹⁴	54.938 ²⁴²	67.20 ⁶⁶
Sept. 6.4	32.411 ²⁴⁰	45.60 ²²	48.606 ²²⁹	44.48 ⁸⁷	55.205 ²⁶⁷	66.49 ⁷¹
16.3	32.667 ²⁵⁶	45.63 ³	48.855 ²⁴⁹	43.92 ⁵⁶	55.495 ²⁹⁰	65.73 ⁷⁶
26.3	32.942 ²⁷⁵	45.40 ²³	49.123 ²⁶³	43.72 ²⁰	55.805 ³¹⁰	64.93 ⁸⁰
Oct. 6.3	33.233 ²⁹¹	44.92 ⁴⁸	49.408 ²⁸⁵	43.89 ¹⁷	56.132 ³²⁷	64.10 ⁸³
16.2	33.534 ³⁰¹	44.20 ⁷²	49.704 ²⁹⁶	44.44 ⁵⁵	56.472 ³⁴⁰	63.25 ⁸⁵
26.2	33.842 ³⁰⁸	43.24 ⁹⁶	50.009 ³⁰⁵	45.37 ⁹³	56.822 ³⁵⁰	62.40 ⁸⁵
Nov. 5.2	34.151 ³⁰⁹	42.09 ¹¹⁵	50.315 ³⁰⁶	46.66 ¹²⁹	57.176 ³⁵⁴	61.59 ⁸¹
15.2	34.458 ³⁰⁷	40.77 ¹³²	50.618 ³⁰³	48.25 ¹⁵⁹	57.528 ³⁵²	60.85 ⁷⁴
25.1	34.752 ²⁹⁴	39.33 ¹⁴⁴	50.910 ²⁹²	50.09 ¹⁸⁴	57.869 ³⁴¹	60.21 ⁶⁴
Dec. 5.1	35.030 ²⁷⁸	37.82 ¹⁵¹	51.182 ²⁷²	52.11 ²⁰²	58.192 ³²³	59.71 ⁵⁰
15.1	35.280 ²⁵⁰	36.31 ¹⁵¹	51.426 ²⁴⁴	54.25 ²¹⁴	58.486 ²⁹⁴	59.37 ³⁴
25.1	35.494 ²¹⁴	34.87 ¹⁴⁴	51.638 ²¹²	56.42 ²¹⁷	58.745 ²⁵⁹	59.21 ¹⁶
35.0	35.671 ¹⁷⁷	33.55 ¹³²	51.806 ¹⁶⁸	58.55 ²¹³	58.958 ²¹³	59.25 ⁴
Mean Place	31.985	38.55	48.383	55.33	54.711	65.41
Sec δ , Tan δ	1.004	+0.095	1.014	-0.165	1.135	+0.536
L α , L δ	0.00	-0.2	0.00	-0.2	+0.01	-0.2
ω α , ω δ	0.00	+0.9	0.00	+0.9	+0.02	+0.9
Authority and Catalogue No.	A. E.	466	A. N.	468	A. E.	470

No. 466 corrected for a parallax of $0''.31$. The reductions from $c.g.$ to brighter star vary during the year from $+0''.028$ to $+0''.42$ to $+0''.047$ to $+0''.28$

APPARENT PLACES OF STARS, 1928.

325

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ξ Argus.		γ Geminorum.		ζ Argus.	
	3·47	G o p	5·04	K o	2·27	O d
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
Mean Solar Date.						
	^h 07 ^m 46	^o 24 ['] 40	^h 07 ^m 59	^o 27 ['] 59	^h 08 ^m 01	^o 39 ['] 47
Jan. 1·1	16·474 ¹³⁵	35·29 ²⁸¹	06·143 ¹⁹⁹	51·16 ⁸	04·071 ¹⁴⁵	49·39 ³³⁶
11·0	16·609 ⁸⁴	38·10 ²⁷⁰	06·342 ¹⁴⁵	51·24 ²⁸	04·216 ⁸⁵	52·75 ³³²
21·0	16·693 ³⁰	40·80 ²⁵³	06·487 ⁸⁹	51·52 ⁴⁶	04·301 ²⁴	56·07 ³¹⁷
31·0	16·723	43·33	06·576	51·98	04·325	59·24
Feb. 9·9	16·701 ²²	45·61 ²²⁸	06·607 ³¹	52·59 ⁶¹	04·289 ³⁶	62·18 ²⁹⁴
19·9	16·630 ⁷¹	47·60 ¹⁹⁹	06·583 ²⁴	53·30 ⁷¹	04·197 ⁹²	64·84 ²⁶⁶
29·9	16·517 ¹¹³	49·27 ¹⁶⁷	06·510 ⁷³	54·06 ⁷⁶	04·056 ¹⁴¹	67·14 ²³⁰
Mar. 10·9	16·369 ¹⁴⁸	50·59 ¹³²	06·396 ¹¹⁴	54·83 ⁷⁷	03·873 ¹⁸³	69·05 ¹⁹¹
20·8	16·195 ¹⁷⁴	51·55 ⁹⁶	06·250 ¹⁴⁶	55·56 ⁷³	03·660 ²¹³	70·54 ¹⁴⁹
30·8	16·005 ¹⁹⁰	52·13 ⁵⁸	06·084 ¹⁶⁶	56·22 ⁶⁶	03·425 ²³⁵	71·59 ¹⁰⁵
Apr. 9·8	15·808 ¹⁹⁷	52·33 ²⁰	05·908 ¹⁷⁶	56·77 ⁵⁵	03·179 ²⁴⁶	72·18 ⁵⁹
19·8	15·615 ¹⁹³	52·16 ¹⁷	05·733 ¹⁷⁵	57·19 ⁴²	02·933 ²⁴⁶	72·30 ¹²
29·7	15·433 ¹⁸²	51·63 ⁵³	05·569 ¹⁶⁴	57·48 ²⁹	02·696 ²³⁷	71·97 ³³
May 9·7	15·270 ¹⁶³	50·75 ⁸⁸	05·425 ¹⁴⁴	57·64 ¹⁶	02·476 ²²⁰	71·20 ⁷⁷
19·7	15·132 ¹³⁸	49·55 ¹²⁰	05·307 ¹¹⁸	57·67 ³	02·280 ¹⁹⁶	70·00 ¹²⁰
29·6	15·024 ¹⁰⁸	48·04 ¹⁵¹	05·222 ⁸⁵	57·37 ¹⁰	02·113 ¹⁶⁷	68·41 ¹⁵⁹
June 8·6	14·948 ⁷⁶	46·27 ¹⁷⁷	05·172 ⁵⁰	57·31 ²¹	01·981 ¹³²	66·46 ¹⁹⁵
18·6	14·906 ⁴²	44·27 ²⁰⁰	05·160 ¹²	57·20 ³⁰	01·887 ⁹⁴	64·20 ²²⁶
28·6	14·901 ⁵	42·11 ²¹⁶	05·186 ²⁶	56·67 ³⁹	01·833 ⁵⁴	61·69 ²⁵¹
July 8·5	14·933 ³²	39·83 ²²⁸	05·249 ⁶³	56·21 ⁴⁶	01·821 ¹²	59·01 ²⁶⁸
18·5	15·000 ⁶⁷	37·50 ²³³	05·349 ¹⁰⁰	55·69 ⁵²	01·851 ³⁰	56·22 ²⁷⁹
28·5	15·102 ¹⁰²	35·20 ²³⁰	05·484 ¹³⁵	55·11 ⁵⁸	01·924 ⁷³	53·40 ²⁸²
Aug. 7·5	15·238 ¹³⁶	32·99 ²²¹	05·651 ¹⁶⁷	54·46 ⁶⁵	02·038 ¹¹⁴	50·65 ²⁷⁵
17·4	15·406 ¹⁶⁸	30·95 ²⁰⁴	05·849 ¹⁹⁸	53·75 ⁷¹	02·194 ¹⁵⁶	48·06 ²⁵⁹
27·4	15·605 ¹⁹⁹	29·17 ¹⁷⁸	06·076 ²²⁷	52·99 ⁷⁶	02·388 ¹⁹⁴	45·71 ²³⁵
Sept. 6·4	15·831 ²²⁶	27·71 ¹⁴⁶	06·329 ²⁵³	52·16 ⁸³	02·620 ²³²	43·71 ²⁰⁰
16·3	16·083 ²⁵²	26·64 ¹⁰⁷	06·606 ²⁷⁷	51·27 ⁸⁹	02·886 ²⁶⁶	42·14 ¹⁵⁷
26·3	16·358 ²⁷⁵	26·01 ⁶³	06·906 ³⁰⁰	50·34 ⁹³	03·182 ²⁹⁶	41·05 ¹⁰⁹
Oct. 6·3	16·651 ²⁹³	25·86 ¹⁵	07·226 ³²⁰	49·36 ⁹⁸	03·504 ³²²	40·51 ⁵⁴
16·3	16·959 ³⁰⁸	26·22 ³⁶	07·562 ³³⁶	48·35 ¹⁰¹	03·545 ³⁴¹	40·55 ⁴
26·2	17·277 ³¹⁸	27·08 ⁸⁶	07·911 ³⁴⁹	47·34 ¹⁰¹	04·199 ³⁵⁴	41·19 ⁶⁴
Nov. 5·2	17·596 ³¹⁹	28·43 ¹³⁵	08·268 ³⁵⁷	46·36 ⁹⁸	04·557 ³⁵⁸	42·41 ¹²²
15·2	17·911 ³¹⁵	30·21 ¹⁷⁸	08·625 ³⁵⁷	45·45 ⁹¹	04·910 ³⁵³	44·18 ¹⁷⁷
25·2	18·214 ³⁰³	32·37 ²¹⁶	08·976 ³⁵¹	44·65 ⁸⁰	05·249 ³³⁹	46·45 ²²⁷
Dec. 5·1	18·495 ²⁸¹	34·84 ²⁴⁷	09·311 ³³⁵	44·00 ⁶⁵	05·562 ³¹³	49·14 ²⁶⁹
15·1	18·747 ²⁵²	37·53 ²⁶⁹	09·620 ³⁰⁹	43·52 ⁴⁸	05·841 ²⁷⁹	52·16 ³⁰²
25·1	18·960 ²¹³	40·35 ²⁸²	09·896 ²⁷⁶	43·23 ²⁹	06·075 ²³⁴	55·40 ³²⁴
35·0	19·130 ¹⁷⁰	43·20 ²⁸⁵	10·129 ²³³	43·16 ⁷	06·258 ¹⁸³	58·76 ³³⁶
Mean Place	15·893	41·00	05·883	51·23	03·156	57·79
Sec δ, Tan δ	1·101	—0·459	1·133	+0·532	1·302	—0·833
L α, L δ	—0·01	—0·2	+0·01	—0·2	—0·02	—0·2
ω α, ω δ	—0·01	+0·9	+0·02	+0·9	—0·03	+0·9
Authority and Catalogue No.	475		A. E. 489		A. E. 492	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ρ Argus.		γ Argus.		20 Puppis.	
	2.88	F 5	2.22	O a ϕ	5.05	G 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 08 04	[°] ['] 24 05	^h ^m 08 07	[°] ['] 47 07	^h ^m 08 10	[°] ['] 15 34
Jan. 1.1	^s 29.110	["] 37.90	^s 19.912	["] 15.34	^s 01.713	["] 06.90
11.0	29.265 ¹⁵⁵	40.71 ²⁸¹	20.064 ¹⁵²	18.89 ³⁵⁵	01.879 ¹⁶⁶	09.35 ²⁴⁵
21.0	29.369 ¹⁰⁴	43.44 ²⁷³	20.149 ⁸⁵	22.41 ³⁵²	01.996 ¹¹⁷	11.69 ²³⁴
31.0	29.420 ⁵¹	46.00 ²⁵⁶	20.167 ¹⁸	25.82 ³⁴¹	02.061 ⁶⁵	13.86 ²¹⁷
Feb. 10.0	29.418 ²	48.35 ²³⁵	20.118 ⁴⁹	29.02 ³²⁰	02.076 ¹⁵	15.81 ¹⁹⁵
19.9	29.366 ⁵²	50.41 ²⁰⁶	20.007 ¹¹¹	31.94 ²⁹²	02.042 ³⁴	17.51 ¹⁷⁰
29.9	29.270 ⁹⁶	52.17 ¹⁷⁶	19.842 ¹⁶⁵	34.51 ²⁵⁷	01.964 ⁷⁸	18.92 ¹⁴¹
Mar. 10.9	29.137 ¹³³	53.58 ¹⁴¹	19.631 ²¹¹	36.68 ²¹⁷	01.850 ¹¹⁴	20.03 ¹¹¹
20.8	28.976 ¹⁶¹	54.64 ¹⁰⁶	19.384 ²⁴⁷	38.41 ¹⁷³	01.708 ¹⁴²	20.84 ⁸¹
30.8	28.796 ¹⁸⁰	55.34 ⁷⁰	19.112 ²⁷²	39.68 ¹²⁷	01.547 ¹⁶¹	21.34 ⁵⁰
Apr. 9.8	28.606 ¹⁹⁰	55.67 ³³	18.827 ²⁸⁵	40.47 ⁷⁹	01.376 ¹⁷¹	21.53 ¹⁹
19.8	28.417 ¹⁸⁹	55.63 ⁴	18.539 ²⁸⁸	40.77 ³⁰	01.205 ¹⁷¹	21.43 ¹⁰
29.7	28.236 ¹⁸¹	55.24 ³⁹	18.258 ²⁸¹	40.57 ²⁰	01.041 ¹⁶⁴	21.04 ³⁹
May 9.7	28.071 ¹⁶⁵	54.50 ⁷⁴	17.994 ²⁶⁴	39.90 ⁶⁷	00.893 ¹⁴⁸	20.37 ⁶⁷
19.7	27.928 ¹⁴³	53.44 ¹⁰⁶	17.753 ²⁴¹	38.76 ¹¹⁴	00.765 ¹²⁸	19.44 ⁹³
29.7	27.811 ¹¹⁷	52.08 ¹³⁶	17.543 ²¹⁰	37.19 ¹⁵⁷	00.662 ¹⁰³	18.27 ¹¹⁷
June 8.6	27.725 ⁸⁶	50.45 ¹⁶³	17.370 ¹⁷³	35.23 ¹⁹⁶	00.589 ⁷³	16.89 ¹³⁸
18.6	27.672 ⁵³	48.58 ¹⁸⁷	17.238 ¹³²	32.92 ²³¹	00.546 ⁴³	15.32 ¹⁵⁷
28.6	27.652 ²⁰	46.54 ²⁰⁴	17.150 ⁸⁸	30.33 ²⁵⁹	00.536 ¹⁰	13.61 ¹⁷¹
July 8.5	27.668 ¹⁶	44.37 ²¹⁷	17.108 ⁴²	27.52 ²⁸¹	00.558 ²²	11.81 ¹⁸⁰
18.5	27.718 ⁵⁰	42.13 ²²⁴	17.114 ⁶	24.58 ²⁹⁴	00.613 ⁵⁵	09.97 ¹⁸⁴
28.5	27.802 ⁸⁴	39.89 ²²⁴	17.169 ⁵⁵	21.59 ²⁹⁹	00.700 ⁸⁷	08.13 ¹⁸⁴
Aug. 7.5	27.920 ¹¹⁸	37.73 ²¹⁶	17.273 ¹⁰⁴	18.65 ²⁹⁴	00.818 ¹¹⁸	06.38 ¹⁷⁵
17.4	28.070 ¹⁵⁰	35.73 ²⁰⁰	17.424 ¹⁵¹	15.84 ²⁸¹	00.966 ¹⁴⁸	04.77 ¹⁶¹
27.4	28.252 ¹⁸²	33.95 ¹⁷⁸	17.621 ¹⁹⁷	13.28 ²⁵⁶	01.143 ¹⁷⁷	03.37 ¹⁴⁰
Sept. 6.4	28.463 ²¹¹	32.47 ¹⁴⁸	17.863 ²⁴²	11.05 ²²³	01.347 ²⁰⁴	02.24 ¹¹³
16.4	28.702 ²³⁹	31.37 ¹¹⁰	18.145 ²⁸²	09.24 ¹⁸¹	01.577 ²³⁰	01.44 ⁸⁰
26.3	28.966 ²⁶⁴	30.69 ⁶⁸	18.463 ³¹⁸	07.94 ¹³⁰	01.831 ²⁵⁴	01.01 ⁴³
Oct. 6.3	29.251 ²⁸⁵	30.48 ²¹	18.812 ³⁴⁹	07.20 ⁷⁴	02.105 ²⁷⁴	00.99 ²
16.3	29.554 ³⁰³	30.76 ²⁸	19.183 ³⁷¹	07.07 ¹³	02.398 ²⁹³	01.41 ⁴²
26.2	29.869 ³¹⁵	31.54 ⁷⁸	19.570 ³⁸⁷	07.56 ⁴⁹	02.704 ³⁰⁶	02.26 ⁸⁵
Nov. 5.2	30.191 ³²²	32.80 ¹²⁶	19.962 ³⁹²	08.68 ¹¹²	03.018 ³¹⁴	03.52 ¹²⁶
15.2	30.512 ³²¹	34.51 ¹⁷¹	20.348 ³⁸⁶	10.39 ¹⁷¹	03.333 ³¹⁵	05.15 ¹⁶³
25.2	30.823 ³¹¹	36.61 ²¹⁰	20.717 ³⁶⁹	12.64 ²²⁵	03.641 ³⁰⁸	07.11 ¹⁹⁶
Dec. 5.1	31.117 ²⁹⁴	39.03 ²⁴²	21.057 ³⁴⁰	15.35 ²⁷¹	03.934 ²⁹³	09.33 ²²²
15.1	31.383 ²⁶⁶	41.68 ²⁶⁵	21.358 ³⁰¹	18.44 ³⁰⁹	04.203 ²⁶⁹	11.72 ²³⁹
25.1	31.614 ²³¹	44.48 ²⁸⁰	21.609 ²⁵¹	21.80 ³³⁶	04.439 ²³⁶	14.21 ²⁴⁹
35.1	31.801 ¹⁸⁷	47.32 ²⁸⁴	21.802 ¹⁹³	25.32 ³⁵²	04.635 ¹⁹⁶	16.71 ²⁵⁰
Mean Place	28.592	44.54	18.736	25.07	01.337	12.63
Sec δ , Tan δ	1.095	-0.447	1.470	-1.077	1.038	-0.2
L α , L δ	-0.01	-0.2	-0.02	-0.2	-0.01	-0.2
ω α , ω δ	-0.02	+0.9	-0.04	+0.9	-0.01	+0.8
Authority and Catalogue No.	A. E.	495	A. E.	498	A. E.	500

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Cancr.		δ^1 Cancr.		ϵ Argus.	
	3.76	K 2	5.88	F 0	1.74	K 0-B
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 08 ^m 12	[°] 9 ['] 24	^h 08 ^m 19	[°] 18 ['] 33	^h 08 ^m 20	[°] 59 ['] 16
Jan. 1.1	36.872 ¹⁸⁷	33.32 ¹¹¹	14.750 ²⁰⁴	53.49 ⁵⁹	64.100 ¹⁷⁹	26.05 ³⁷⁰
11.0	37.059 ¹⁴⁰	32.21 ⁹³	14.954 ¹⁵⁶	52.90 ³⁸	64.279 ⁹⁴	29.75 ³⁷⁵
21.0	37.199 ⁸⁹	31.28 ⁷³	15.110 ¹⁰²	52.52 ¹⁸	64.373 ⁷	33.50 ³⁶⁹
31.0	37.288	30.55	15.212	52.34	64.380	37.19
Feb. 10.0	37.325 ³⁷	30.01 ⁵⁴	15.260 ⁴⁸	52.36 ²	64.302 ⁷⁸	40.72 ³⁵³
19.9	37.312 ¹³	29.67 ³⁴	15.257 ³	52.53 ¹⁷	64.145 ¹⁵⁷	44.00 ³²⁸
29.9	37.255 ⁵⁷	29.49 ¹⁸	15.206 ⁵¹	52.84 ³¹	63.917 ²²⁸	46.97 ²⁹⁷
Mar. 10.9	37.160 ⁹⁵	29.47 ²	15.114 ⁹²	53.25 ⁴¹	63.628 ²⁸⁹	49.55 ²⁵⁸
20.9	37.036 ¹²⁴	29.58 ¹¹	14.991 ¹²³	53.71 ⁴⁶	63.290 ³³⁸	51.70 ²¹⁵
30.8	36.892 ¹⁴⁴	29.80 ²²	14.846 ¹⁴⁵	54.20 ⁴⁹	62.916 ³⁷⁴	53.37 ¹⁶⁷
Apr. 9.8	36.738 ¹⁵⁴	30.10 ³⁰	14.690 ¹⁵⁶	54.69 ⁴⁹	62.519 ³⁹⁷	54.54 ¹¹⁷
19.8	36.583 ¹⁵⁵	30.47 ³⁷	14.530 ¹⁶⁰	55.15 ⁴⁶	62.113 ⁴⁰⁶	55.20 ⁶⁶
29.7	36.436 ¹⁴⁷	30.90 ⁴³	14.378 ¹⁵²	55.57 ⁴²	61.710 ⁴⁰³	55.33 ¹³
May 9.7	36.305 ¹³¹	31.37 ⁴⁷	14.242 ¹³⁶	55.94 ³⁷	61.322 ³⁸⁸	54.94 ³⁹
19.7	36.195 ¹¹⁰	31.87 ⁵⁰	14.127 ¹¹⁵	56.26 ²	60.958 ³⁶⁴	54.04 ⁹⁰
29.7	36.111 ⁸⁴	32.40 ⁵³	14.039 ⁸⁸	56.53 ²⁷	60.628 ³³⁰	52.66 ¹³⁸
June 8.6	36.058 ⁵³	32.96 ⁵⁶	13.980 ⁵⁹	56.75 ²²	60.340 ²⁸⁸	50.83 ¹⁸³
18.6	36.035 ²³	33.53 ⁵⁷	13.954 ²⁶	56.91 ¹⁶	60.102 ²³⁸	48.59 ²²⁴
28.6	36.044 ⁹	34.10 ⁵⁷	13.961 ⁷	57.01 ¹⁰	59.918 ¹⁸⁴	46.01 ²⁵⁸
July 8.6	36.086 ⁴²	34.66 ⁵⁶	14.002 ⁴¹	57.07 ⁶	59.794 ¹²⁴	43.15 ²⁸⁶
18.5	36.160 ⁷⁴	35.18 ⁵²	14.074 ⁷²	57.05 ²	59.733 ⁶¹	40.10 ³⁰⁵
28.5	36.264 ¹⁰⁴	35.65 ⁴⁷	14.179 ¹⁰⁵	56.96 ⁹	59.738 ⁵	36.94 ³¹⁶
Aug. 7.5	36.397 ¹³³	36.04 ³⁹	14.314 ¹³⁵	56.79 ¹⁷	59.811 ⁷³	33.78 ³¹⁶
17.4	36.558 ¹⁶¹	36.31 ²⁷	14.478 ¹⁶⁴	56.52 ²⁷	59.951 ¹⁴⁰	30.71 ³⁰⁷
27.4	36.746 ¹⁸⁸	36.45 ¹⁴	14.670 ¹⁹²	56.14 ³⁸	60.157 ²⁰⁶	27.85 ²⁸⁶
Sept. 6.4	36.959 ²¹³	36.42 ³	14.888 ²¹⁸	55.63 ⁵¹	60.427 ²⁷⁰	25.29 ²⁵⁶
16.4	37.196 ²³⁷	36.20 ²²	15.132 ²⁴⁴	55.00 ⁶³	60.757 ³³⁰	23.13 ²¹⁶
26.3	37.455 ²⁵⁹	35.78 ⁴²	15.399 ²⁶⁷	54.22 ⁷⁸	61.139 ³⁸²	21.47 ¹⁶⁶
Oct. 6.3	37.734 ²⁷⁹	35.14 ⁶⁴	15.687 ²⁸⁸	53.30 ⁹²	61.565 ⁴²⁶	20.37 ¹¹⁰
16.3	38.031 ²⁹⁷	34.28 ⁸⁶	15.995 ³⁰⁸	52.26 ¹⁰⁴	62.025 ⁴⁶⁰	19.90 ⁴
26.3	38.342 ³¹¹	33.23 ¹⁰⁵	16.318 ³²³	51.12 ¹¹⁴	62.508 ⁴⁸³	20.08 ¹⁸
Nov. 5.2	38.662 ³²⁰	32.00 ¹²³	16.651 ³³³	49.91 ¹²¹	62.999 ⁴⁹¹	20.92 ⁸⁴
15.2	38.984 ³²²	30.65 ¹³⁵	16.989 ³³⁸	48.67 ¹²⁴	63.483 ⁴⁸⁴	22.41 ¹⁴⁹
25.2	39.303 ³¹⁹	29.22 ¹⁴³	17.325 ³³⁶	47.44 ¹²³	63.945 ⁴⁶²	24.49 ²⁰⁸
Dec. 5.1	39.610 ³⁰⁷	27.76 ¹⁴⁶	17.649 ³²⁴	46.27 ¹¹⁷	64.370 ⁴²⁵	27.10 ²⁶¹
15.1	39.895 ²⁸⁵	26.32 ¹⁴⁴	17.953 ³⁰⁴	45.21 ¹⁰⁶	64.743 ³⁷³	30.16 ³⁰⁶
25.1	40.150 ²⁵⁵	24.97 ¹³⁵	18.225 ²⁷²	44.30 ⁹¹	65.050 ³⁰⁷	33.57 ³⁴¹
35.1	40.368 ²¹⁸	23.74 ¹²³	18.460 ²³⁵	43.57 ⁷³	65.282 ²³²	37.20 ³⁶³
Mean Place	36.671	31.18	14.564	52.64	62.220	38.24
Sec δ , Tan δ	1.014	+0.166	1.055	+0.336	1.957	-1.683
L a , L δ	0.00	-0.2	+0.01	-0.2	-0.04	-0.2
ω a , ω δ	+0.01	+0.8	+0.01	+0.8	-0.06	+0.8
Authority and Catalogue No.	A. E.	503		507	A. E.	508

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	30 Monocerotis. 3·95 A o		o Ursæ Majoris. 3·47 G o		η Cancrī. 5·52 K o	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
Mean Solar Date.	^h 08 22 ^m	^o 3 40 [']	^h 08 24 ^m	^o 60 57 [']	^h 08 28 ^m	^o 20 41 [']
Jan. 1·1	03·991 ^s 184	09·61 ^s 188	18·77 ^s 35	34·27 ^s 177	32·975 ^s 217	13·50 ^s 51
11·0	04·175 ^s 138	11·49 ^s 173	19·12 ^s 27	36·04 ^s 206	33·192 ^s 167	12·99 ^s 29
21·0	04·313 ^s 88	13·22 ^s 155	19·39 ^s 17	38·10 ^s 225	33·359 ^s 114	12·70 ^s 7
31·0	04·401 ^s	14·77 ^s	19·56 ^s	40·35 ^s	33·473 ^s	12·63 ^s
Feb. 10·0	04·438 ^s 37	16·11 ^s 134	19·63 ^s 7	42·71 ^s 236	33·532 ^s 59	12·76 ^s 13
19·9	04·427 ^s 11	17·22 ^s 111	19·60 ^s 3	45·08 ^s 237	33·538 ^s 6	13·06 ^s 30
29·9	04·372 ^s 55	18·09 ^s 87	19·48 ^s 12	47·35 ^s 227	33·496 ^s 42	13·49 ^s 43
Mar. 10·9	04·279 ^s 93	18·72 ^s 63	19·28 ^s 20	49·43 ^s 208	33·411 ^s 85	14·00 ^s 51
20·9	04·157 ^s 122	19·13 ^s 41	19·02 ^s 26	51·24 ^s 181	33·293 ^s 118	14·57 ^s 57
30·8	04·015 ^s 142	19·32 ^s 19	18·71 ^s 31	52·71 ^s 147	33·151 ^s 142	15·15 ^s 58
Apr. 9·8	03·861 ^s 154	19·30 ^s 2	18·37 ^s 34	53·79 ^s 108	32·995 ^s 156	15·71 ^s 56
19·8	03·705 ^s 156	19·09 ^s 21	18·02 ^s 35	54·44 ^s 65	32·836 ^s 159	16·23 ^s 52
29·7	03·556 ^s 149	18·69 ^s 40	17·68 ^s 34	54·65 ^s 21	32·682 ^s 154	16·68 ^s 45
May 9·7	03·420 ^s 136	18·13 ^s 56	17·36 ^s 32	54·42 ^s 23	32·542 ^s 140	17·06 ^s 38
19·7	03·303 ^s 117	17·41 ^s 72	17·07 ^s 29	53·77 ^s 65	32·422 ^s 120	17·36 ^s 30
29·7	03·209 ^s 94	16·55 ^s 86	16·83 ^s 24	52·73 ^s 104	32·327 ^s 95	17·58 ^s 22
June 8·6	03·143 ^s 66	15·56 ^s 99	16·65 ^s 18	51·33 ^s 140	32·262 ^s 65	17·73 ^s 15
18·6	03·106 ^s 37	14·47 ^s 109	16·54 ^s 11	49·63 ^s 170	32·229 ^s 33	17·80 ^s 7
28·6	03·100 ^s 6	13·31 ^s 116	16·49 ^s 5	47·67 ^s 196	32·229 ^s	17·79 ^s 1
July 8·6	03·125 ^s 25	12·10 ^s 121	16·50 ^s 1	45·51 ^s 216	32·262 ^s 33	17·71 ^s 8
18·5	03·180 ^s 55	10·89 ^s 121	16·59 ^s 9	43·20 ^s 231	32·327 ^s 65	17·56 ^s 15
28·5	03·265 ^s 85	09·71 ^s 118	16·74 ^s 15	40·78 ^s 242	32·425 ^s 98	17·32 ^s 24
Aug. 7·5	03·379 ^s 114	08·60 ^s 111	16·95 ^s 21	38·32 ^s 246	32·553 ^s 128	16·99 ^s 33
17·4	03·522 ^s 143	07·62 ^s 98	17·23 ^s 28	35·86 ^s 246	32·711 ^s 158	16·56 ^s 43
27·4	03·692 ^s 170	06·82 ^s 80	17·56 ^s 33	33·44 ^s 242	32·897 ^s 186	16·03 ^s 53
Sept. 6·4	03·888 ^s 196	06·24 ^s 58	17·95 ^s 39	31·11 ^s 233	33·110 ^s 213	15·38 ^s 65
16·4	04·109 ^s 221	05·93 ^s 31	18·39 ^s 44	28·92 ^s 219	33·350 ^s 240	14·60 ^s 78
26·3	04·355 ^s 246	05·91 ^s 2	18·87 ^s 48	26·90 ^s 202	33·614 ^s 264	13·69 ^s 91
Oct. 6·3	04·622 ^s 267	06·21 ^s 30	19·40 ^s 53	25·11 ^s 179	33·902 ^s 288	12·67 ^s 102
16·3	04·908 ^s 286	06·85 ^s 64	19·96 ^s 56	23·58 ^s 153	34·210 ^s 308	11·54 ^s 113
26·3	05·209 ^s 301	07·82 ^s 97	20·54 ^s 58	22·36 ^s 122	34·535 ^s 325	10·32 ^s 122
Nov. 5·2	05·520 ^s 311	09·08 ^s 126	21·14 ^s 60	21·49 ^s 87	34·872 ^s 337	09·06 ^s 126
15·2	05·836 ^s 316	10·61 ^s 153	21·75 ^s 61	20·99 ^s 50	35·216 ^s 344	07·78 ^s 128
25·2	06·148 ^s 312	12·36 ^s 175	22·35 ^s 60	20·91 ^s 8	35·558 ^s 342	06·54 ^s 124
Dec. 5·1	06·449 ^s 301	14·27 ^s 191	22·92 ^s 57	21·25 ^s 34	35·891 ^s 333	05·38 ^s 116
15·1	06·729 ^s 280	16·26 ^s 199	23·45 ^s 53	22·01 ^s 76	36·204 ^s 313	04·35 ^s 103
25·1	06·979 ^s 250	18·27 ^s 201	23·93 ^s 48	23·18 ^s 117	36·488 ^s 284	03·49 ^s 86
35·1	07·193 ^s 214	20·23 ^s 196	24·34 ^s 41	24·73 ^s 155	36·735 ^s 247	02·84 ^s 65
Mean Place	03·758	13·90	17·811	38·07	32·807	13·03
Sec δ, Tan δ	1·002	-0·064	2·060	+1·801	1·069	+0·378
L a, L δ	0·00	-0·2	+0·04	-0·2	+0·01	-0·2
ω a, ω δ	0·00	+0·8	+0·07	+0·8	+0·02	+0·8
Authority and Catalogue No.	A. E.	509	A. E.	512	A. E.	517

APPARENT PLACES OF STARS, 1928.

329

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Cancr.		α Pyxidis.		δ Argus m.	
	4.73	A 0	3.70	B 2	2.01	A 0
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 08 ^m 39	[°] 21 ['] 43	^h 08 ^m 40	[°] 32 ['] 55	^h 08 ^m 42	[°] 54 ['] 26
Jan. 11.1	07.433 ²²⁸	43.12 ⁵⁰	42.385 ¹⁹⁴	23.14 ³¹⁶	44.237 ²¹¹	24.99 ³⁶³
11.1	07.661 ¹⁷⁹	42.62 ²⁶	42.579 ¹⁴⁰	26.30 ³¹⁶	44.448 ¹³⁸	28.62 ³⁷¹
21.0	07.840 ¹²⁵	42.36 ³	42.719 ⁸³	29.46 ³⁰⁵	44.586 ⁶⁰	32.33 ³⁶⁸
31.0	07.965 ⁷⁰	42.33 ¹⁷	42.802 ²⁶	32.51 ²⁸⁸	44.646 ¹⁶	36.01 ³⁵⁵
Feb. 10.0	08.035 ¹⁷	42.50 ³⁵	42.828 ²⁸	35.39 ²⁶³	44.630 ⁸⁹	39.56 ³³³
19.9	08.052 ³²	42.85 ⁴⁹	42.800 ⁷⁸	38.02 ²³³	44.541 ¹⁵⁵	42.89 ³⁰⁵
29.9	08.020 ⁷⁷	43.34 ⁵⁸	42.722 ¹²⁰	40.35 ²⁰⁰	44.386 ²¹³	45.94 ²⁷⁰
Mar. 10.9	07.943 ¹¹¹	43.92 ⁶³	42.602 ¹⁵⁶	42.35 ¹⁶²	44.173 ²⁶⁰	48.64 ²²⁹
20.9	07.832 ¹³⁷	44.55 ⁶⁵	42.446 ¹⁸¹	43.97 ¹²³	43.913 ²⁹⁶	50.93 ¹⁸⁴
30.8	07.695 ¹⁵²	45.20 ⁶¹	42.265 ¹⁹⁷	45.20 ⁸³	43.617 ³²¹	52.77 ¹³⁶
Apr. 9.8	07.543 ¹⁵⁸	45.81 ⁵⁷	42.068 ²⁰⁴	46.03 ⁴²	43.296 ³³⁴	54.13 ⁸⁷
19.8	07.385 ¹⁵⁴	46.38 ⁵⁰	41.864 ²⁰²	46.45 ⁴⁵	42.962 ³³⁵	55.00 ³⁶
29.8	07.231 ¹⁴³	46.88 ⁴⁰	41.662 ¹⁹³	46.45 ⁸⁰	42.627 ³²⁷	55.36 ¹⁵
May 9.7	07.088 ¹²³	47.28 ³²	41.469 ¹⁷⁸	46.05 ¹⁶	42.300 ³¹⁰	55.21 ⁶⁵
19.7	06.965 ⁹⁹	47.60 ²²	41.291 ¹⁵⁵	45.25 ¹⁶	41.990 ²⁸⁴	54.56 ¹¹³
29.7	06.866 ⁷³	47.82 ¹³	41.136 ¹²⁹	44.09 ⁸¹	41.706 ²⁵²	53.43 ¹⁵⁹
June 8.6	06.793 ⁴¹	47.95 ⁴	41.007 ¹⁰⁰	42.58 ²⁰⁶	41.454 ²¹³	51.84 ²⁰⁰
18.6	06.752 ⁹	47.99 ⁵	40.907 ⁶⁸	40.77 ²²⁶	41.241 ¹⁶⁸	49.84 ²³⁵
28.6	06.743 ²²	47.94 ¹⁴	40.839 ³⁴	38.71 ²⁴⁰	41.073 ¹²⁰	47.49 ²⁶⁵
July 8.6	06.765 ⁵⁶	47.80 ²⁴	40.805 ¹	36.45 ²⁴⁶	40.953 ⁶⁷	44.84 ²⁸⁷
18.5	06.821 ⁸⁷	47.56 ³²	40.806 ³⁸	34.05 ²⁴⁵	40.886 ¹³	41.97 ³⁰⁰
28.5	06.908 ¹¹⁷	47.24 ⁴²	40.844 ⁷⁵	31.59 ²³⁵	40.873 ⁴⁵	38.97 ³⁰⁵
Aug. 7.5	07.025 ¹⁴⁸	46.82 ⁵³	40.919 ¹¹¹	29.14 ²¹⁶	40.918 ¹⁰³	35.92 ²⁹⁸
17.5	07.173 ¹⁷⁷	46.29 ⁶³	41.030 ¹⁸⁴	26.79 ¹⁸⁸	41.021 ¹⁶¹	32.94 ²⁸²
27.4	07.350 ²⁰⁵	45.66 ⁷⁷	41.178 ²¹⁹	24.63 ¹⁵⁴	41.182 ³²²	30.12 ²⁵⁶
Sept. 6.4	07.555 ²³²	44.89 ⁸⁸	41.362 ²⁵²	22.75 ¹¹⁰	41.401 ³⁶⁷	27.56 ²²⁰
16.4	07.787 ²⁵⁹	44.01 ¹⁰¹	41.581 ²⁸²	21.21 ¹⁰	41.674 ⁴⁰⁴	25.36 ¹⁷³
26.3	08.046 ²⁸³	43.00 ¹¹²	41.833 ³⁰⁷	20.11 ⁴⁵	41.996 ⁴³⁰	23.63 ¹²¹
Oct. 6.3	08.329 ³⁰⁵	41.88 ¹²²	42.115 ³²⁸	19.48 ¹⁰⁰	42.363 ⁴⁴⁴	22.42 ⁶¹
16.3	08.634 ³²⁵	40.66 ¹²⁹	42.422 ³⁴¹	19.38 ¹⁵²	42.767 ⁴⁴⁸	21.81 ²
26.3	08.959 ³³⁸	39.37 ¹³⁴	42.750 ³⁴⁶	19.83 ²⁰⁰	43.197 ⁴³⁷	21.83 ⁶⁸
Nov. 5.2	09.297 ³⁴⁷	38.03 ¹²⁹	43.091 ³⁴²	20.83 ²⁴²	43.641 ³⁷¹	22.51 ¹³¹
15.2	09.644 ³⁴⁷	36.69 ¹¹⁹	43.437 ³²⁸	22.35 ²⁷⁶	44.089 ⁴¹¹	23.82 ¹⁹²
25.2	09.991 ³³⁹	35.40 ¹⁰⁵	43.779 ³⁰³	24.35 ²⁹⁹	44.526 ²⁵⁷	25.74 ²⁴⁵
Dec. 5.2	10.330 ²⁹⁴	34.21 ⁸⁸	44.107 ²²⁶	26.77 ³¹⁴	44.937 ³¹⁹	28.19 ²⁹²
15.1	10.652 ²⁵⁷	33.16 ⁶⁶	44.410 ²⁶⁹	29.53 ²⁹⁹	45.308 ²⁵⁷	31.11 ³²⁸
25.1	10.946 ²⁵⁷	32.28 ⁶⁶	44.679 ²²⁶	32.52 ²⁹⁹	45.627 ²⁵⁷	34.39 ³⁵⁴
35.1	11.203	31.62	44.905	35.66	45.884	37.93
Mean Place	07.288	42.92	41.833	33.20	42.886	38.44
Sec δ , Tan δ	1.076	+0.399	1.191	-0.648	1.721	-1.399
L α , L δ	+0.01	-0.3	-0.01	-0.3	-0.03	-0.3
ω α , ω δ	+0.02	+0.8	-0.03	+0.8	-0.06	+0.8
Authority and Catalogue No.	527		A. E. 529		A. E. 531	

(12961)

(NAUTICAL ALMANAC, 1928)

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APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ϵ Hydræ m.		ζ Hydræ.		ι Ursæ Majoris.	
	3.53	F 8	3.30	K 0	3.12	A 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 08 42	[°] ['] 6 40	^h ^m 08 51	[°] ['] 6 13	^h ^m 08 54	[°] ['] 48 19
Jan. 1.1	57.965 ²¹²	65.24 ¹³⁷	35.407 ²¹⁸	17.09 ¹⁴³	17.575 ³¹⁶	28.27 ⁸⁹
11.1	58.177 ¹⁶⁶	63.87 ¹²⁰	35.625 ¹⁷⁴	15.66 ¹²⁵	17.891 ²⁵³	29.16 ¹²³
21.0	58.343 ¹¹⁶	62.67 ⁹⁹	35.799 ¹²⁵	14.41 ¹⁰⁴	18.144 ¹⁸²	30.39 ¹⁵⁰
31.0	58.459	61.68	35.924	13.37	18.326	31.89
Feb. 10.0	58.524 ⁶⁵	60.91 ⁷⁷	35.998 ⁷⁴	12.55 ⁸²	18.435 ¹⁰⁹	33.60 ¹⁷¹
20.0	58.539 ¹⁵	60.35 ⁵⁶	36.021 ²³	11.95 ⁶⁰	18.470 ³⁵	35.43 ¹⁸³
29.9	58.508 ³¹	60.00 ³⁵	35.998 ²³	11.56 ³⁹	18.435 ³⁵	37.30 ¹⁸⁷
Mar. 10.9	58.437 ⁷¹	59.83 ¹⁷	35.934	11.36 ²⁰	18.337 ⁹⁸	39.12 ¹⁸²
20.9	58.333 ¹⁰⁴	59.83 ¹³	35.837 ⁹⁷	11.34 ²	18.187 ¹⁵⁰	40.81 ¹⁶⁹
30.8	58.206 ¹²⁷	59.96 ²⁵	35.714 ¹²³	11.46 ¹²	17.996 ¹⁹¹	42.30 ¹⁴⁹
Apr. 9.8	58.064 ¹⁴²	60.21 ²⁵	35.576 ¹³⁸	11.71 ²⁵	17.778 ²¹⁸	43.53 ¹²³
19.8	57.917 ¹⁴⁷	60.56 ³⁵	35.432 ¹⁴⁴	12.05 ³⁴	17.546 ²³²	44.46 ⁹³
29.8	57.773 ¹⁴⁴	60.99 ⁴³	35.289 ¹⁴³	12.48 ⁴³	17.313 ²³³	45.06 ⁶⁰
May 9.7	57.639 ¹³⁴	61.49 ⁵⁰	35.155 ¹³⁴	12.98 ⁵⁰	17.091 ²²²	45.31 ²⁵
19.7	57.521 ¹¹⁸	62.04 ⁵⁵	35.036 ¹¹⁹	13.54 ⁵⁶	16.889 ²⁰²	45.22 ⁹
29.7	57.425 ⁹⁶	62.63 ⁵⁹	34.937 ⁹⁹	14.14 ⁶⁰	16.717 ¹⁷²	44.79 ⁴³
June 8.7	57.354 ⁷¹	62.25 ⁶²	34.861 ⁷⁶	14.77 ⁶³	16.579 ¹³⁸	44.05 ⁷⁴
18.6	57.311 ⁴³	63.90 ⁶⁵	34.812 ⁴⁹	15.42 ⁶⁵	16.483 ⁹⁶	43.02 ¹⁰³
28.6	57.296 ¹⁵	64.55 ⁶⁵	34.791 ²¹	16.08 ⁶⁶	16.430 ⁵³	41.73 ¹²⁹
July 8.6	57.310 ¹⁴	65.19 ⁶⁴	34.799 ⁸	16.72 ⁶⁴	16.422 ⁸	40.23 ¹⁵⁰
18.5	57.353 ⁴³	65.80 ⁶¹	34.835 ³⁶	17.33 ⁶¹	16.461 ³⁹	38.53 ¹⁷⁰
28.5	57.426 ⁷³	66.34 ⁵⁴	34.900 ⁶⁵	17.89 ⁵⁶	16.545 ⁸⁴	36.69 ¹⁸⁴
Aug. 7.5	57.528 ¹⁰²	66.80 ⁴⁶	34.994 ⁹⁴	18.35 ⁴⁶	16.674 ¹²⁹	34.72 ¹⁹⁷
17.5	57.658 ¹³⁰	67.14 ³⁴	35.116 ¹²²	18.69 ³⁴	16.846 ¹⁷²	32.67 ²⁰⁵
27.4	57.815 ¹⁵⁷	67.33 ¹⁹	35.265 ¹⁴⁹	18.88 ¹⁹	17.061 ²¹⁵	30.57 ²¹⁰
Sept. 6.4	58.000 ¹⁸⁵	67.33 ²⁰	35.442 ¹⁷⁷	18.89 ¹	17.317 ²⁵⁶	28.46 ²¹¹
16.4	58.212 ²¹²	67.13 ²⁰	35.646 ²⁰⁴	18.69 ²⁰	17.612 ²⁹⁵	26.37 ²⁰⁹
26.4	58.449 ²³⁷	66.70 ⁴³	35.877 ²³¹	18.26 ⁴³	17.945 ³³³	24.33 ²⁰⁴
Oct. 6.3	58.709 ²⁶⁰	66.03 ⁶⁷	36.132 ²⁵⁵	17.59 ⁶⁷	18.312 ³⁶⁷	22.38 ¹⁹⁵
16.3	58.992 ²⁸³	65.12 ⁹¹	36.411 ²⁷⁹	16.67 ⁹²	18.711 ³⁹⁹	20.57 ¹⁸¹
26.3	59.294 ³⁰²	63.99 ¹¹³	36.710 ²⁹⁹	15.52 ¹¹⁵	19.138 ⁴²⁷	18.94 ¹⁶³
Nov. 5.2	59.609 ³¹⁵	62.65 ¹³⁴	37.024 ³¹⁴	14.16 ¹³⁶	19.585 ⁴⁴⁷	17.53 ¹⁴¹
15.2	59.933 ³²⁴	61.16 ¹⁴⁹	37.347 ³²³	12.63 ¹⁵³	20.045 ⁴⁶⁰	16.39 ¹¹⁴
25.2	60.258 ³²⁵	59.55 ¹⁶¹	37.673 ³²⁶	10.99 ¹⁶⁴	20.508 ⁴⁶³	15.57 ⁸²
Dec. 5.2	60.575 ³¹⁷	57.88 ¹⁶⁷	37.993 ³²⁰	09.28 ¹⁷¹	20.963 ⁴⁵⁵	15.09 ⁴⁸
15.1	60.875 ³⁰⁰	56.21 ¹⁶⁷	38.298 ³²⁵	07.56 ¹⁷²	21.397 ⁴³⁴	14.99 ¹⁰
25.1	61.149 ²⁷⁴	54.60 ¹⁶¹	38.578 ²⁸⁰	05.90 ¹⁶⁶	21.797 ⁴⁰⁰	15.27 ²⁸
35.1	61.389 ²⁴⁰	53.12 ¹⁴⁸	38.825 ²⁴⁷	04.35 ¹⁵⁵	22.151 ³⁵⁴	15.92 ⁶⁵
Mean Place	57.839	62.41	35.305	14.11	17.174	32.28
Sec δ , Tan δ	1.007	+0.117	1.006	+0.109	1.504	+1.123
L α , L δ	0.00	-0.3	0.00	-0.3	+0.02	-0.3
ω α , ω δ	+0.01	+0.8	0.00	+0.7	+0.05	+0.7
Authority and Catalogue No.	A. N.	532	A. E.	539	A. E.	542

APPARENT PLACES OF STARS, 1928.

331

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Cancr.		κ Cancr.		ξ Cancr.	
	4.27	A 3	5.14	B 8	5.22	G 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 08 54	[°] ['] 12 08	^h ^m 09 03	[°] ['] 10 57	^h ^m 09 05	[°] ['] 22 20
Jan. 1.1	33.112 ²²⁸	16.90 ¹¹²	50.964 ²³⁴	34.39 ¹²¹	13.371 ²⁵²	15.40 ⁶⁰
11.1	33.340 ¹⁸³	15.78 ⁹¹	51.198 ¹⁹⁰	33.18 ¹⁰²	13.623 ²⁰⁶	14.80 ³⁴
21.0	33.523 ¹³³	14.87 ⁶⁹	51.388 ¹⁴¹	32.16 ⁷⁹	13.829 ¹⁵³	14.46 ⁸
31.0	33.656 ⁸¹	14.18 ⁴⁶	51.529 ⁸⁹	31.37 ⁵⁶	13.982 ⁹⁹	14.38 ¹⁵
Feb. 10.0	33.737 ²⁹	13.72 ²⁵	51.618 ³⁸	30.81 ³³	14.081 ⁴⁴	14.53 ³⁷
20.0	33.766 ¹⁸	13.47 ⁵	51.656 ¹⁰	30.48 ¹³	14.125 ⁶	14.90 ⁵³
29.9	33.748 ⁶⁰	13.42 ¹¹	51.646 ⁵²	30.35 ⁵	14.119 ⁵³	15.43 ⁶⁵
Mar. 10.9	33.688 ⁹⁵	13.53 ²⁴	51.594 ⁸⁸	30.40 ¹⁹	14.066 ⁹¹	16.08 ⁷²
20.9	33.593 ¹²¹	13.77 ³⁵	51.506 ¹¹⁵	30.59 ³⁰	13.975 ¹²⁰	16.80 ⁷⁴
30.9	33.472 ¹³⁸	14.12 ⁴²	51.391 ¹³²	30.89 ³⁹	13.855 ¹⁴¹	17.54 ⁷³
Apr. 9.8	33.334 ¹⁴⁵	14.54 ⁴⁶	51.259 ¹⁴²	31.28 ⁴⁶	13.714 ¹⁵⁰	18.27 ⁶⁹
19.8	33.189 ¹⁴⁴	15.00 ⁴⁸	51.117 ¹⁴¹	31.74 ⁴⁹	13.564 ¹⁵⁰	18.96 ⁶¹
29.8	33.045 ¹³⁵	15.48 ⁵⁰	50.976 ¹³⁴	32.23 ⁵¹	13.414 ¹⁴³	19.57 ⁵¹
May 9.7	32.910 ¹²¹	15.98 ⁴⁹	50.842 ¹²¹	32.74 ⁵¹	13.271 ¹³⁰	20.08 ⁴⁰
19.7	32.789 ¹⁰⁰	16.47 ⁴⁸	50.721 ¹⁰²	33.25 ⁵¹	13.141 ¹⁰⁹	20.48 ²⁸
29.7	32.689 ⁷⁶	16.95 ⁴⁶	50.619 ⁸⁰	33.7 ⁵²	13.032 ⁸⁵	20.76 ¹⁷
June 8.7	32.613 ⁴⁹	17.41 ⁴³	50.539 ⁵⁵	34.28 ⁴⁶	12.947 ⁵⁸	20.93 ⁶
18.6	32.564 ²¹	17.84 ³⁹	50.484 ²⁸	34.7 ⁴⁴	12.889 ³⁰	20.99 ⁶
28.6	32.543 ⁸	18.23 ³⁴	50.456 ¹	35.13 ³⁹	12.859 ³⁰	20.93 ¹⁷
July 8.6	32.551 ³⁷	18.57 ²⁸	50.455 ²⁸	35.57 ³³	12.859 ³⁰	20.76 ²⁹
18.6	32.588 ⁶⁷	18.85 ²¹	50.483 ⁵⁷	35.90 ²⁵	12.889 ⁶¹	20.47 ⁴¹
28.5	32.655 ⁹⁵	19.06 ¹⁰	50.540 ⁸⁴	36.15 ¹⁶	12.950 ⁹¹	20.06 ⁵²
Aug. 7.5	32.750 ¹²⁴	19.16 ¹	50.624 ¹¹³	36.31 ³	13.041 ¹²²	19.54 ⁶⁵
17.5	32.874 ¹⁵²	19.15 ¹⁶	50.737 ¹⁴²	36.34 ¹²	13.163 ¹⁵¹	18.89 ⁷⁸
27.4	33.026 ¹⁷⁹	18.99 ³²	50.879 ¹⁷⁰	36.22 ²⁸	13.314 ¹⁸¹	18.11 ⁹¹
Sept. 6.4	33.205 ²⁰⁷	18.67 ⁵⁰	51.049 ¹⁹⁸	35.94 ⁴⁸	13.495 ²¹⁰	17.20 ¹⁰⁴
16.4	33.412 ²³⁴	18.17 ⁶⁹	51.247 ²²⁵	35.46 ⁶⁸	13.705 ²³⁹	16.16 ¹¹⁸
26.4	33.646 ²⁶⁰	17.48 ⁸⁹	51.472 ²⁵²	34.78 ⁸⁸	13.944 ²⁶⁶	14.98 ¹²⁹
Oct. 6.3	33.906 ²⁸³	16.59 ¹⁰⁸	51.724 ²⁷⁸	33.90 ¹⁰⁹	14.210 ²⁹³	13.69 ¹⁴¹
16.3	34.189 ³⁰³	15.51 ¹²⁶	52.002 ²⁹⁹	32.81 ¹²⁸	14.503 ³¹⁷	12.28 ¹⁴⁷
26.3	34.492 ³²⁰	14.25 ¹⁴¹	52.301 ³¹⁶	31.53 ¹⁴²	14.820 ³³⁵	10.81 ¹⁵²
Nov. 5.3	34.812 ³³⁰	12.84 ¹⁵¹	52.617 ³²⁹	30.11 ¹⁵⁶	15.155 ³⁴⁸	09.29 ¹⁵²
15.2	35.142 ³³⁴	11.33 ¹⁵⁷	52.946 ³³⁴	28.55 ¹⁶³	15.503 ³⁵³	07.77 ¹⁴⁶
25.2	35.476 ³²⁸	09.76 ¹⁵⁷	53.280 ³²⁹	26.92 ¹⁶⁴	15.856 ³⁴⁹	06.31 ¹³⁶
Dec. 5.2	35.804 ³¹⁴	08.19 ¹⁵²	53.609 ³¹⁷	25.28 ¹⁶¹	16.205 ³³⁶	04.95 ¹²¹
15.1	36.118 ²⁸⁹	06.67 ¹⁴¹	53.926 ²⁹³	23.67 ¹⁵¹	16.541 ²⁸¹	03.74 ¹⁰¹
25.1	36.407 ²⁵⁶	05.26 ¹²⁶	54.219 ²⁶¹	22.16 ¹³⁵	16.854 ²⁸¹	02.73 ⁷⁸
35.1	36.663	04.00	54.480	20.81	17.135	01.95
Mean Place	33.027	15.06	50.907	32.31	13.301	15.61
Sec δ , Tan δ	1.023	+0.215	1.019	+0.194	1.081	+0.411
L α , L δ	0.00	-0.3	0.00	-0.3	+0.01	-0.3
ω α , ω δ	+0.01	+0.7	+0.01	+0.7	+0.02	+0.7
Authority and Catalogue No.	A. E.	543		556		559

(12961)

Z 2

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	λ Argus.		β Argus.		83 Cancr.	
	2.22	K 5	1.80	A 0	6.60	F 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 09 05	[°] 43 08	^h 09 12	[°] 69 24	^h 09 14	[°] 18 00
Jan. 1.1	21.434 ²²⁸	14.78	27.62	55.95	57.900	41.99
11.1	21.662 ¹⁷⁰	18.17 ³³⁹	27.96 ³⁴	59.51 ³⁵⁶	58.153 ²⁵³	41.09 ⁹⁰
21.1	21.832 ¹⁰⁷	21.64 ³⁴⁷	28.19 ²³	63.27 ³⁷⁶	58.361 ²⁰⁸	40.44 ⁶⁵
31.0	21.939	25.08 ³⁴⁴	28.30 ¹¹	67.12 ³⁸⁵	58.519 ¹⁵⁸	40.05 ³⁹
Feb. 10.0	21.984 ⁴⁵	28.42 ³³⁴	28.29 ¹	70.95 ³⁸³	58.625 ¹⁰⁶	39.91 ¹⁴
20.0	21.967 ¹⁷	31.55 ³¹³	28.16 ¹³	74.68 ³⁷³	58.678 ⁵³	39.99 ⁸
29.9	21.893 ⁷⁴	34.42 ²⁸⁷	27.93 ²³	78.20 ³⁵²	58.681 ³	40.26 ²⁷
Mar. 10.9	21.769 ¹²⁴	36.96 ²⁵⁴	27.61 ³²	81.44 ³²⁴	58.638 ⁴³	40.68 ⁴²
20.9	21.604 ¹⁶⁵	39.13 ²¹⁷	27.20 ⁴¹	84.33 ²⁸⁹	58.557 ⁸¹	41.21 ⁵³
30.9	21.405 ¹⁹⁹	40.90 ¹⁷⁷	26.72 ⁴⁸	86.82 ²⁴⁹	58.447 ¹¹⁰	41.82 ⁶¹
Apr. 9.8	21.184 ²²¹	42.24 ¹³⁴	26.19 ⁵³	88.86 ²⁰⁴	58.317 ¹³⁰	42.45 ⁶³
19.8	20.949 ²³⁵	43.13 ⁸⁹	25.62 ⁵⁷	90.41 ¹⁵⁵	58.176 ¹⁴¹	43.08 ⁶³
29.8	20.709 ²⁴⁰	43.56 ⁴³	25.04 ⁵⁸	91.44 ¹⁰³	58.032 ¹⁴⁴	43.68 ⁶⁰
May 9.8	20.474 ²³⁵	43.53 ¹	24.45 ⁵⁹	91.94 ⁵⁰	57.893 ¹³⁹	44.22 ⁵⁴
19.7	20.250 ²²⁴	43.04 ⁴⁹	23.86 ⁵⁹	91.90 ⁴	57.767 ¹²⁶	44.69 ⁴⁷
29.7	20.044 ²⁰⁶	42.12 ⁹²	23.30 ⁵⁶	91.33 ⁵⁷	57.658 ¹⁰⁹	45.09 ⁴⁰
June 8.7	19.861 ¹⁸³	40.78 ¹³⁴	22.78 ⁵²	90.25 ¹⁰⁸	57.571 ⁸⁷	45.40 ³¹
18.6	19.706 ¹⁵⁵	39.07 ¹⁷¹	22.31 ⁴⁷	88.67 ¹⁵⁸	57.507 ⁶⁴	45.62 ²²
28.6	19.583 ¹²³	37.03 ²⁰⁴	21.90 ⁴¹	86.65 ²⁰²	57.471 ³⁶	45.75 ¹³
July 8.6	19.496 ⁸⁷	34.70 ²³³	21.55 ³⁵	84.25 ²⁴⁰	57.463 ⁸	45.79 ⁴
18.6	19.447 ⁴⁹	32.17 ²⁵³	21.29 ²⁶	81.52 ²⁷³	57.484 ²¹	45.73 ⁶
28.5	19.438 ⁹	29.51 ²⁶⁶	21.12 ¹⁷	78.55 ²⁹⁷	57.534 ⁵⁰	45.55 ¹⁸
Aug. 7.5	19.472 ³⁴	26.79 ²⁷²	21.05 ⁷	75.43 ³¹²	57.613 ⁷⁹	45.26 ²⁹
17.5	19.550 ⁷⁸	24.11 ²⁶⁸	21.07 ²	72.27 ³¹⁶	57.720 ¹⁰⁷	44.84 ⁴²
27.5	19.672 ¹²²	21.57 ²⁵⁴	21.20 ¹³	69.17 ³¹⁰	57.857 ¹³⁷	44.27 ⁵⁷
Sept. 6.4	19.838 ¹⁶⁶	19.27 ²³⁰	21.44 ²⁴	66.23 ²⁹⁴	58.023 ¹⁶⁶	43.56 ⁷¹
16.4	20.049 ²¹¹	17.29 ¹⁹⁸	21.77 ³³	63.58 ²⁶⁵	58.218 ¹⁹⁵	42.68 ⁸⁸
26.4	20.302 ²⁵³	15.72 ¹⁵⁷	22.20 ⁴³	61.32 ²²⁶	58.442 ²²⁴	41.64 ¹⁰⁴
Oct. 6.3	20.594 ²⁹²	14.63 ¹⁰⁹	22.71 ⁵¹	59.53 ¹⁷⁹	58.695 ²⁵³	40.45 ¹¹⁹
16.3	20.921 ³²⁷	14.09 ⁵⁴	23.29 ⁵⁸	58.31 ¹²²	58.974 ²⁷⁹	39.11 ¹³⁴
26.3	21.275 ³⁵⁴	14.13 ⁴	23.93 ⁶⁴	57.71 ⁶⁰	59.278 ³⁰⁴	37.65 ¹⁴⁶
Nov. 5.3	21.649 ³⁷⁴	14.76 ⁶³	24.60 ⁶⁷	57.75 ⁴	59.601 ³²³	36.09 ¹⁵⁶
15.2	22.033 ³⁸⁴	16.00 ¹²⁴	25.28 ⁶⁸	58.48 ⁷³	59.939 ³³⁸	34.49 ¹⁶⁰
25.2	22.416 ³⁸³	17.80 ¹⁸⁰	25.96 ⁶⁸	59.87 ¹³⁹	60.284 ³⁴⁵	32.89 ¹⁶⁰
Dec. 5.2	22.786 ³⁷⁰	20.10 ²³⁰	26.60 ⁶⁴	61.87 ²⁰⁰	60.627 ³⁴³	31.35 ¹⁵⁴
15.2	23.132 ³⁴⁶	22.83 ²⁷³	27.18 ⁵⁸	64.43 ²⁵⁶	60.959 ³³²	29.92 ¹⁴³
25.1	23.442 ³¹⁰	25.91 ³⁰⁸	27.68 ⁵⁰	67.46 ³⁰³	61.270 ³¹¹	28.66 ¹²⁶
35.1	23.705 ²⁶³	29.23 ³³²	28.09 ⁴¹	70.86 ³⁴⁰	61.549 ²⁷⁹	27.59 ¹⁰⁷
Mean Place	20.748	28.10	25.058	73.50	57.876	41.41
Sec δ , Tan δ	1.370	-0.937	2.845	-2.663	1.052	+0.325
L α , L δ	-0.02	-0.3	-0.05	-0.3	+0.01	-0.3
ω α , ω δ	-0.04	+0.7	-0.13	+0.7	+0.02	+0.7
Authority and Catalogue No.	A. E.	560	A. E.	566	A. E.	569

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ι Argus.		40 Lyncis.		θ Pyxidis.	
	2.25	F 0	3.30	K 5	4.93	M a
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 09 ^m 15	[°] 58 ['] 58	^h 09 ^m 16	[°] 34 ['] 41	^h 09 ^m 18	[°] 25 ['] 39
Jan. 1.1	11.149 ^s 281	04.97	40.531 ^s 289	50.23	18.459 ^s 230	19.10
11.1	11.430 ^s 199	08.52 355	40.820 ^s 239	50.23	18.689 ^s 183	22.00 290
21.1	11.629 ^s 117	12.24 372	41.059 ^s 183	50.56 33	18.872 ^s 131	24.90 282
31.0	11.746 ^s	16.02 378	41.242 ^s	51.19 63	19.003 ^s	27.72
Feb. 10.0	11.780 ^s 34	19.75 373	41.364 ^s 122	52.07 88	19.081 ^s 78	30.39 267
20.0	11.732 ^s 48	23.35 360	41.426 ^s 62	53.16 109	19.107 ^s 26	32.85 246
29.9	11.607 ^s 125	26.72 337	41.430 ^s 4	54.39 123	19.084 ^s 23	35.05 220
Mar. 10.9	11.415 ^s 192	29.79 307	41.381 ^s 49	55.68 129	19.018 ^s 66	36.95 190
20.9	11.164 ^s 251	32.51 272	41.287 ^s 94	56.98 130	18.914 ^s 104	38.53 158
30.9	10.866 ^s 298	34.83 232	41.158 ^s 129	58.22 124	18.781 ^s 133	39.77 124
Apr. 9.8	10.533 ^s 333	36.69 186	41.004 ^s 154	59.34 112	18.628 ^s 153	40.66 89
19.8	10.175 ^s 358	38.06 137	40.835 ^s 169	60.30 96	18.463 ^s 165	41.20 54
29.8	09.806 ^s 369	38.94 88	40.662 ^s 173	61.06 76	18.294 ^s 169	41.38 18
May 9.8	09.435 ^s 371	39.30 36	40.494 ^s 168	61.60 64	18.128 ^s 166	41.22 16
19.7	09.071 ^s 364	39.13 17	40.340 ^s 154	61.91 31	17.972 ^s 156	40.71 51
29.7	08.727 ^s 344	38.46 67	40.205 ^s 135	61.99 8	17.830 ^s 142	39.89 82
June 8.7	08.409 ^s 318	37.30 116	40.096 ^s 109	61.83 16	17.707 ^s 123	38.76 113
18.6	08.124 ^s 285	35.68 162	40.015 ^s 81	61.43 38	17.606 ^s 101	37.36 140
28.6	07.881 ^s 243	33.64 204	39.966 ^s 49	60.86 59	17.529 ^s 77	35.73 163
July 8.6	07.686 ^s 195	31.24 240	39.950 ^s 16	60.09 77	17.481 ^s 48	33.90 183
18.6	07.545 ^s 141	28.55 269	39.968 ^s 18	59.13 96	17.461 ^s 20	31.95 195
28.5	07.462 ^s 83	25.66 289	40.021 ^s 53	58.01 112	17.472 ^s 11	29.91 204
Aug. 7.5	07.442 ^s 20	22.64 302	40.108 ^s 87	56.74 127	17.515 ^s 43	27.87 204
17.5	07.487 ^s 45	19.60 304	40.227 ^s 119	55.35 139	17.590 ^s 75	25.89 198
27.5	07.601 ^s 114	16.64 296	40.382 ^s 155	53.84 151	17.699 ^s 109	24.05 184
Sept. 6.4	07.782 ^s 181	13.88 276	40.570 ^s 188	52.23 161	17.843 ^s 144	22.44 161
16.4	08.030 ^s 248	11.41 247	40.792 ^s 222	50.54 169	18.022 ^s 179	21.11 133
26.4	08.342 ^s 312	09.32 209	41.047 ^s 255	48.79 175	18.234 ^s 212	20.15 96
Oct. 6.3	08.711 ^s 369	07.73 159	41.333 ^s 286	47.01 178	18.479 ^s 245	19.60 55
16.3	09.131 ^s 420	06.70 103	41.650 ^s 317	45.23 178	18.754 ^s 275	19.52 8
26.3	09.591 ^s 460	06.29 41	41.994 ^s 344	43.48 175	19.055 ^s 301	19.93 41
Nov. 5.3	10.077 ^s 486	06.52 23	42.360 ^s 366	41.82 166	19.377 ^s 322	20.82 89
15.2	10.577 ^s 500	07.41 89	42.742 ^s 382	40.29 153	19.712 ^s 335	22.19 137
25.2	11.073 ^s 496	08.93 152	43.132 ^s 390	38.93 136	20.051 ^s 339	24.00 181
Dec. 5.2	11.550 ^s 477	11.04 211	43.521 ^s 389	37.81 112	20.386 ^s 335	26.20 220
15.2	11.991 ^s 441	13.68 264	43.898 ^s 377	36.96 85	20.705 ^s 319	28.70 250
25.1	12.382 ^s 391	16.76 308	44.251 ^s 353	36.41 55	20.999 ^s 294	31.44 274
35.1	12.709 ^s 327	20.17 341	44.570 ^s 319	36.19 22	21.257 ^s 258	34.32 288
Mean Place	09.785	21.47	40.418	52.94	18.221	29.64
Sec δ, Tan δ	1.940	-1.662	1.216	+0.692	1.109	-0.480
L a, L δ	-0.03	-0.3	+0.01	-0.3	-0.01	-0.3
ω a, ω δ	-0.08	+0.7	+0.03	+0.7	-0.02	+0.7
Authority and Catalogue No.	A. N.	570	A. E.	571		572.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	κ Argus.		α Hydræ.		ψ Argus <i>m</i> .	
	2.63	B 3	2.16	K 2	3.64	F 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 09 ^m 19	[°] 54 ['] 41	^h 09 ^m 24	[°] 8 ['] 20	^h 09 ^m 27	[°] 40 ['] 08
Jan. 1.1	54.013 ²⁷²	53.03 ³⁵¹	02.978 ²³⁶	37.84 ²²⁴	52.177 ²⁵¹	48.73 ³²⁷
11.1	54.285 ²⁰²	56.54 ³⁶⁷	03.214 ¹⁹⁴	40.08 ²¹³	52.428 ¹⁹⁷	52.00 ³³⁷
21.1	54.487 ¹²⁷	60.21 ³⁷²	03.408 ¹⁴⁶	42.21 ¹⁹⁷	52.625 ¹³⁹	55.37 ³³⁷
31.0	54.614 ⁵⁰	63.93 ³⁶⁷	03.554 ⁹⁶	44.18 ¹⁷⁸	52.764 ⁷⁹	58.74 ³²⁸
Feb. 10.0	54.664 ²³	67.60 ³⁵²	03.650 ⁴⁷	45.96 ¹⁵⁴	52.843 ¹⁹	62.02 ³¹¹
20.0	54.641 ⁹⁴	71.12 ³³⁰	03.697 ⁴²	47.50 ¹³⁰	52.862 ⁸⁶	65.13 ²⁸⁷
Mar. 1.0	54.547 ¹⁵⁵	74.42 ³⁰¹	03.697 ⁷⁸	48.80 ¹⁰³	52.826 ¹²⁹	68.00 ²⁵⁸
10.9	54.392 ²⁰⁹	77.43 ²⁶⁵	03.655 ¹⁰⁵	49.83 ⁵³	52.740 ¹⁶⁴	70.58 ²²³
20.9	54.183 ²⁵²	80.08 ²²⁵	03.577 ¹²⁵	50.61 ²⁸	52.611 ¹⁸⁹	72.81 ¹⁸⁶
30.9	53.931 ²⁸⁴	82.33 ¹⁸¹	03.472 ¹³⁷	51.14 ¹⁶	52.447 ²¹³	74.67 ¹⁴⁶
Apr. 9.8	53.647 ³⁰⁶	84.14 ¹³³	03.347 ¹⁴⁰	51.42 ³⁷	52.258 ²⁰⁷	76.13 ¹⁰³
19.8	53.341 ³¹⁷	85.47 ⁸⁵	03.210 ¹³⁷	51.48 ⁵⁵	52.053 ¹⁹⁴	77.16 ⁶⁰
29.8	53.024 ³¹⁹	86.32 ³⁴	03.070 ¹²⁸	51.32 ⁷³	51.840 ²¹⁴	77.76 ¹⁵
May 9.8	52.705 ³¹¹	86.66 ¹⁷	02.933 ¹¹³	50.95 ⁸⁸	51.626 ²¹⁴	77.91 ²⁷
19.7	52.394 ²⁹⁵	86.49 ⁶⁶	02.805 ⁹⁶	50.40 ¹⁰²	51.419 ²⁰⁷	77.64 ⁷⁰
29.7	52.099 ²⁷²	85.83 ¹¹³	02.692 ⁷⁵	49.67 ¹¹³	51.225 ¹⁹⁴	76.94 ¹¹⁰
June 8.7	51.827 ²⁴²	84.70 ¹⁵⁹	02.596 ⁵²	48.79 ¹²⁰	51.050 ¹⁷⁵	75.84 ¹⁴⁸
18.7	51.585 ²⁰⁶	83.11 ¹⁹⁸	02.521 ²⁸	47.77 ¹²⁴	50.897 ¹⁵³	74.36 ¹⁸¹
28.6	51.379 ¹⁶⁵	81.13 ²³³	02.469 ¹	46.64 ¹²⁴	50.771 ¹²⁶	72.55 ²⁰⁹
July 8.6	51.214 ¹¹⁷	78.80 ²⁶²	02.441 ²⁶	45.44 ¹²⁴	50.675 ⁶²	70.46 ²³²
18.6	51.097 ⁶⁷	76.18 ²⁸²	02.440 ⁵³	44.20 ¹¹⁹	50.613 ²⁷	68.14 ²⁴⁷
28.5	51.030 ¹³	73.36 ²⁹⁴	02.466 ⁸¹	42.96 ¹⁰⁹	50.586 ¹²	65.67 ²⁵⁵
Aug. 7.5	51.017 ⁴⁵	70.42 ²⁹⁵	02.519 ¹¹¹	41.77 ⁹⁴	50.598 ⁵³	63.12 ²⁵³
17.5	51.062 ¹⁰⁴	67.47 ²⁸⁷	02.600 ¹⁴⁰	40.68 ⁷⁴	50.651 ⁹⁴	60.59 ²⁴⁴
27.5	51.166 ¹⁶⁴	64.60 ²⁶⁸	02.711 ¹⁷¹	39.74 ⁴⁸	50.745 ²²³	58.15 ²²⁴
Sept. 6.4	51.330 ²²⁴	61.92 ²³⁹	02.851 ²⁰¹	39.00 ¹⁴	50.883 ³⁰¹	55.91 ¹⁹⁵
16.4	51.554 ²⁸⁰	59.53 ²⁰⁰	03.022 ²³⁰	38.52 ⁸⁶	51.064 ³³³	53.96 ¹⁵⁸
26.4	51.834 ³³³	57.53 ¹⁵²	03.223 ²³⁰	38.33 ⁵⁰	51.287 ²⁶⁴	52.38 ¹¹³
Oct. 6.4	52.167 ³⁷⁹	56.01 ⁹⁸	03.453 ²⁸³	38.47 ⁸⁶	51.551 ³⁰¹	51.25 ⁶²
16.3	52.546 ⁴¹⁷	55.03 ³⁷	03.711 ³⁰⁴	38.97 ¹²⁰	51.852 ³⁵⁷	50.63 ⁷
26.3	52.963 ⁴⁴³	54.66 ²⁷	03.994 ³¹⁸	39.83 ¹⁵³	52.185 ³⁷⁷	50.56 ⁵²
Nov. 5.3	53.406 ⁴⁵⁷	54.93 ⁹¹	04.298 ³²⁶	41.03 ¹⁸²	52.542 ³⁷¹	51.08 ¹⁰⁸
15.2	53.863 ⁴⁵⁸	55.84 ¹⁵⁴	04.616 ³²⁴	42.56 ²⁰³	52.914 ³⁵³	52.16 ¹⁶⁵
25.2	54.321 ⁴⁴³	57.38 ²¹¹	04.942 ³¹³	44.38 ²²⁸	53.291 ²⁸⁴	53.81 ²¹⁴
Dec. 5.2	54.764 ⁴¹³	59.49 ²⁶²	05.266 ²⁹¹	46.41 ²²⁹	53.662 ³²³	55.95 ²⁵⁷
15.2	55.177 ³⁷⁰	62.11 ³⁰⁵	05.579 ²⁶²	48.60 ²²⁸	54.015 ²⁸⁴	58.52 ²⁹²
25.1	55.547 ³¹⁴	65.16 ³³⁸	06.132 ²²⁹	50.88 ²²⁹	54.338 ²⁸⁴	61.44 ³¹⁸
35.1	55.861 ³¹⁴	68.54 ³³⁸	06.132 ²²⁹	53.17 ²²⁹	54.622 ²⁸⁴	64.62 ³¹⁸
Mean Place	52.960	69.23	02.935	44.54	51.724	62.81
Sec δ , Tan δ	1.731	-1.413	1.011	-0.147	1.308	-0.844
L α , L δ	-0.02	-0.3	0.00	-0.3	-0.01	-0.3
ω α , ω δ	-0.07	+0.7	-0.01	+0.6	-0.04	+0.6
Authority and Catalogue No.	A. E.	573	A. E.	576	A. E.	580

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	θ Ursæ Majoris.		ξ Leonis.		N Velorum.	
	3.26	F 8 p	5.12	G 5	3.04	K 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 09 28	^m 52 00	^h 09 28	^m 11 36	^h 09 28	^m 56 42
Jan. 1.1	03.479 ³⁷⁴	17.64 ⁷⁸	03.947 ²⁵⁴	72.42 ¹²⁹	63.019 ²⁹³	41.22 ³⁴⁸
11.1	03.853 ³¹²	18.42 ¹¹⁹	04.201 ²¹²	71.13 ¹⁰⁷	63.312 ²²²	44.70 ³⁶⁶
21.1	04.165 ²⁴⁰	19.61 ¹⁵²	04.413 ¹⁶⁵	70.06 ⁸³	63.534 ¹⁴⁴	48.36 ³⁷⁴
31.0	04.405 ¹⁶⁴	21.13 ¹⁸⁰	04.578 ¹¹⁴	69.23 ⁵⁹	63.678 ⁶⁵	52.10 ³⁷²
Feb. 10.0	04.569 ⁸⁵	22.93 ¹⁹⁹	04.692 ⁶³	68.64 ³⁴	63.743 ¹²	55.82 ³⁶⁰
20.0	04.654 ⁷	24.92 ²⁰⁹	04.755 ¹³	68.30 ¹²	63.731 ⁸⁶	59.42 ³⁴¹
Mar. 1.0	04.661 ⁶³	27.01 ²⁰⁸	04.768 ³⁰	68.18 ⁸	63.645 ¹⁵¹	62.83 ³¹²
10.9	04.598 ¹²⁵	29.09 ²⁰⁰	04.738 ⁶⁸	68.26 ²³	63.494 ²⁰⁸	65.95 ²⁷⁹
20.9	04.473 ¹⁷⁶	31.09 ¹⁸²	04.670 ⁹⁷	68.49 ³⁵	63.286 ²⁵⁶	68.74 ²⁴⁰
30.9	04.297 ²¹⁴	32.91 ¹⁵⁷	04.573 ¹¹⁹	68.84 ⁴⁴	63.030 ²⁹¹	71.14 ¹⁹⁶
Apr. 9.8	04.083 ²³⁸	34.48 ¹²⁷	04.454 ¹³¹	69.28 ⁵¹	62.739 ³¹⁷	73.10 ¹⁴⁹
19.8	03.845 ²⁴⁹	35.75 ⁹¹	04.323 ¹³⁶	69.79 ⁵³	62.422 ³³¹	74.59 ¹⁰¹
29.8	03.596 ²⁴⁷	36.66 ⁵⁴	04.187 ¹³²	70.32 ⁵⁴	62.091 ³³⁶	75.60 ⁵⁰
May 9.8	03.349 ²³⁵	37.20 ¹⁶	04.055 ¹²³	70.86 ⁵⁴	61.755 ³³²	76.10 ²
19.7	03.114 ²¹²	37.36 ²³	03.932 ¹⁰⁸	71.40 ¹⁵³	61.423 ³¹⁸	76.08 ⁵²
29.7	02.902 ¹⁸²	37.13 ⁶¹	03.824 ⁸⁹	71.93 ⁴⁹	61.105 ²⁹⁶	75.56 ¹⁰¹
June 8.7	02.720 ¹⁴⁷	36.52 ⁹⁶	03.735 ⁶⁸	72.42 ⁴⁵	60.809 ²⁶⁷	74.55 ¹⁴⁶
18.7	02.573 ¹⁰⁶	35.56 ¹²⁸	03.667 ⁴⁴	72.87 ⁴⁰	60.542 ²³²	73.09 ¹⁸⁹
28.6	02.467 ⁶²	34.28 ¹⁵⁷	03.623 ¹⁸	73.27 ³⁴	60.310 ¹⁹⁰	71.20 ²²⁵
July 8.6	02.405 ¹⁵	32.71 ¹⁸²	03.605 ⁶	73.61 ²⁶	60.120 ¹⁴³	68.95 ²⁵⁶
18.6	02.390 ³¹	30.89 ²⁰⁴	03.611 ³⁵	73.87 ¹⁷	59.977 ⁹⁰	66.39 ²⁷⁹
28.5	02.421 ⁷⁸	28.85 ²²¹	03.646 ⁶¹	74.04 ⁷	59.887 ³⁴	63.60 ²⁹³
Aug. 7.5	02.499 ¹²⁵	26.64 ²³⁴	03.707 ⁸⁹	74.11 ⁷	59.853 ²⁶	60.67 ²⁹⁷
17.5	02.624 ¹⁷²	24.30 ²⁴⁴	03.796 ¹¹⁸	74.04 ²³	59.879 ⁸⁹	57.70 ²⁹¹
27.5	02.796 ²¹⁹	21.86 ²⁴⁹	03.914 ¹⁴⁷	73.81 ⁴⁰	59.968 ¹⁵⁴	54.79 ²⁷⁵
Sept. 6.4	03.015 ²⁶⁵	19.37 ²⁵⁰	04.061 ¹⁷⁷	73.41 ⁵⁹	60.122 ²¹⁶	52.04 ²⁴⁸
16.4	03.280 ³⁰⁹	16.87 ²⁴⁶	04.238 ²⁰⁶	72.82 ⁷⁹	60.338 ²⁷⁹	49.56 ²¹¹
26.4	03.589 ³⁵²	14.41 ²³⁸	04.444 ²³⁶	72.03 ¹⁰⁰	60.617 ³³⁶	47.45 ¹⁶¹
Oct. 6.4	03.941 ³⁹³	12.03 ²²⁵	04.680 ²⁶⁴	71.03 ¹²¹	60.953 ³⁸⁷	45.81 ¹¹¹
16.3	04.334 ⁴²⁸	09.78 ²⁰⁶	04.944 ²⁸⁹	69.82 ¹³⁸	61.340 ⁴²⁹	44.70 ⁵¹
26.3	04.762 ⁴⁵⁹	07.72 ¹⁸³	05.233 ³¹¹	68.44 ¹⁵⁴	61.769 ⁴⁵⁹	44.19 ¹³
Nov. 5.3	05.221 ⁴⁸⁰	05.89 ¹⁵³	05.544 ³²⁶	66.90 ¹⁶⁶	62.228 ⁴⁷⁵	44.32 ⁷⁷
15.2	05.701 ⁴⁹³	04.36 ¹¹⁹	05.870 ³³⁷	65.24 ¹⁷³	62.704 ⁴⁷⁹	45.09 ¹⁴¹
25.2	06.194 ⁴⁹³	03.17 ⁷⁹	06.207 ³³⁶	63.51 ¹⁷⁴	63.183 ⁴⁶⁶	46.50 ²⁰⁰
Dec. 5.2	06.687 ⁴⁷⁹	02.38 ³⁸	06.543 ³²⁸	61.77 ¹⁷⁰	63.649 ⁴³⁷	48.50 ²⁵³
15.2	07.166 ⁴⁵¹	02.00 ⁶	06.871 ³⁰⁸	60.07 ¹⁴³	64.086 ³⁹³	51.03 ²⁹⁸
25.1	07.617 ⁴⁰⁹	02.06 ⁴⁹	07.179 ²⁷⁹	58.48 ¹⁵⁹	64.479 ³³⁷	54.01 ³³³
35.1	08.026	02.55	07.458	57.05	64.816	57.34
Mean Place	03.113	23.42	03.976	70.47	61.943	58.34
Sec δ, Tan δ	1.625	+1.280	1.021	+0.206	1.822	-1.523
L α, L δ	+0.02	-0.3	0.00	-0.3	-0.02	-0.3
ω α, ω δ	+0.07	+0.6	+0.01	+0.6	-0.08	+0.6
Authority and Catalogue No.	A. E.	581		583	A. N.	584

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	κ Hydræ.		α Leonis.		ϵ Leonis.	
	4.96	B 3	3.76	F 5-A 3	3.12	G o p
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 09 36 ^m	[°] 14 00 [']	^h 09 37 ^m	[°] 10 13 [']	^h 09 41 ^m	[°] 24 06 [']
Jan. 1.1	51.220 ^s	09.38 ^s	18.474 ^s	16.85 ^s	45.987 ^s	22.74 ^s
11.1	51.465 ²⁴⁵	11.86 ²⁴⁸	18.734 ²⁶⁰	15.45 ¹⁴⁰	46.272 ²⁸⁵	22.02 ⁷²
21.1	51.668 ²⁰³	14.27 ²⁴¹	18.952 ²¹⁸	14.27 ¹¹⁸	46.513 ²⁴¹	21.60 ⁴²
31.0	51.824 ¹⁵⁶	16.56 ²²⁹	19.125 ¹⁷³	13.32 ⁹⁵	46.706 ¹⁹³	21.48 ¹²
Feb. 10.0	51.930 ¹⁰⁶	18.68 ²¹²	19.247 ¹²²	12.63 ⁶⁹	46.845 ¹³⁹	21.64 ¹⁶
20.0	51.986 ⁵⁶	20.58 ¹⁹⁰	19.318 ⁷¹	12.18 ⁴⁵	46.930 ⁸⁵	22.05 ⁴¹
Mar. 1.0	51.995 ⁹	22.23 ¹⁶⁵	19.341 ²³	11.96 ²²	46.961 ³¹	22.67 ⁶²
10.9	51.961 ³⁴	23.61 ¹³⁸	19.319 ²²	11.95 ¹	46.944 ¹⁷	23.44 ⁷⁷
20.9	51.890 ⁷¹	24.72 ¹¹¹	19.260 ⁵⁹	12.11 ¹⁶	46.885 ⁵⁹	24.32 ⁸⁸
30.9	51.790 ¹⁰⁰	25.55 ⁸³	19.170 ⁹⁰	12.41 ³⁰	46.791 ⁹⁴	25.25 ⁹³
Apr. 9.9	51.669 ¹²¹	26.10 ⁵⁵	19.058 ¹¹²	12.81 ⁴⁰	46.672 ¹¹⁹	26.17 ⁹²
19.8	51.534 ¹³⁵	26.38 ²⁸	18.932 ¹²⁶	13.29 ⁴⁸	46.536 ¹³⁶	27.04 ⁸⁷
29.8	51.393 ¹⁴¹	26.40 ²	18.800 ¹³²	13.82 ⁵³	46.393 ¹⁴³	27.83 ⁷⁹
May 9.8	51.253 ¹⁴⁰	26.17 ²³	18.670 ¹³⁰	14.37 ⁵⁵	46.251 ¹⁴²	28.51 ⁶⁸
19.7	51.120 ¹³³	25.70 ⁴⁷	18.548 ¹²²	14.93 ⁵⁶	46.116 ¹³⁵	29.05 ⁵⁴
29.7	50.998 ¹²²	25.00 ⁷⁰	18.438 ¹¹⁰	15.48 ⁵⁵	45.996 ¹²⁰	29.44 ³⁹
June 8.7	50.892 ¹⁰⁶	24.10 ⁹⁰	18.346 ⁹²	16.01 ⁵³	45.893 ¹⁰³	29.68 ²⁴
18.7	50.805 ⁸⁷	23.03 ¹⁰⁷	18.273 ⁷³	16.50 ⁴⁹	45.812 ⁸¹	29.76 ⁸
28.6	50.739 ⁶⁶	21.79 ¹²⁴	18.223 ⁵⁰	16.95 ⁴⁵	45.755 ⁵⁷	29.69 ⁷
July 8.6	50.695 ⁴⁴	20.43 ¹³⁶	18.197 ²⁶	17.35 ⁴⁰	45.724 ³¹	29.46 ²³
18.6	50.677 ¹⁸	19.00 ¹⁴³	18.197 [—]	17.68 ³³	45.721 ³	29.08 ³⁸
28.6	50.686 ⁹	17.54 ¹⁴⁶	18.222 ²⁵	17.91 ²³	45.746 ²⁵	28.54 ⁵⁴
Aug. 7.5	50.722 ³⁶	16.10 ¹⁴⁴	18.274 ⁵²	18.03 ¹²	45.800 ⁵⁴	27.84 ⁷⁰
17.5	50.787 ⁶⁵	14.73 ¹³⁷	18.354 ⁸⁰	18.02 ¹	45.884 ⁸⁴	27.00 ⁸⁴
27.5	50.882 ⁹⁵	13.51 ¹²²	18.462 ¹⁰⁸	17.86 ¹⁶	45.998 ¹¹⁴	26.01 ⁹⁹
Sept. 6.4	51.009 ¹²⁷	12.48 ¹⁰³	18.599 ¹³⁷	17.52 ³⁴	46.143 ¹⁴⁵	24.86 ¹¹⁵
16.4	51.168 ¹⁵⁹	11.71 ⁷⁷	18.766 ¹⁶⁷	16.98 ⁵⁴	46.319 ¹⁷⁶	23.57 ¹²⁹
26.4	51.359 ¹⁹¹	11.25 ⁴⁶	18.963 ¹⁹⁷	16.23 ⁷⁵	46.528 ²⁰⁹	22.13 ¹⁴⁴
Oct. 6.4	51.581 ²²²	11.14 ¹¹	19.190 ²²⁷	15.26 ⁹⁷	46.769 ²⁴¹	20.56 ¹⁵⁷
16.3	51.834 ²⁵³	11.41 ²⁷	19.446 ²⁵⁶	14.08 ¹¹⁸	47.040 ²⁷¹	18.89 ¹⁶⁷
26.3	52.115 ²⁸¹	12.09 ⁶⁸	19.729 ²⁸³	12.70 ¹³⁸	47.341 ³⁰¹	17.14 ¹⁷⁵
Nov. 5.3	52.418 ³⁰³	13.16 ¹⁰⁷	20.036 ³⁰⁷	11.14 ¹⁵⁶	47.666 ³²⁵	15.36 ¹⁷⁸
15.3	52.738 ³²⁰	14.61 ¹⁴⁵	20.360 ³²⁴	09.45 ¹⁶⁹	48.011 ³⁴⁵	13.59 ¹⁷⁷
25.2	53.067 ³²⁹	16.40 ¹⁷⁹	20.694 ³³⁴	07.68 ¹⁷⁷	48.369 ³⁵⁸	11.88 ¹⁷¹
Dec. 5.2	53.396 ³²⁹	18.47 ²⁰⁷	21.030 ³³⁶	05.87 ¹⁸¹	48.730 ³⁶¹	10.29 ¹⁵⁹
15.2	53.716 ³²⁰	20.76 ²²⁹	21.359 ³²⁹	04.09 ¹⁷⁸	49.084 ³⁵⁴	08.88 ¹⁴¹
25.1	54.015 ²⁹⁹	23.19 ²⁴³	21.671 ³¹²	02.41 ¹⁶⁸	49.422 ³³⁸	07.69 ¹¹⁹
35.1	54.286 ²⁷¹	25.69 ²⁵⁰	21.955 ²⁸⁴	00.88 ¹⁵³	49.731 ³⁰⁹	06.77 ⁹²
Mean Place	51.198	17.79	18.542	14.56	46.041	23.81
Sec δ , Tan δ	1.031	-0.249	1.016	+0.180	1.096	+0.447
L α , L δ	0.00	-0.3	0.00	-0.3	+0.01	-0.3
ω α , ω δ	-0.01	+0.6	+0.01	+0.6	+0.02	+0.6
Authority and Catalogue No.	A. N.	593	A. N.	594	A. E.	597

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	μ Leonis.		π Leonis.		α Leonis.	
	4·10	K o	4·89	M a	1·34	B 8
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
Mean Solar Date.						
	^h 09 ^m 48	26° 20'	^h 09 ^m 56	8° 23'	^h 10 ^m 04	12° 18'
Jan. 1·1	40·266 ^s	47·06	24·423 ^s	28·20	32·158 ^s	73·02
11·1	40·560 ²⁹⁴	46·41 ⁶⁵	24·695 ²⁷²	26·64 ¹⁵⁶	32·439 ²⁸¹	71·60 ¹⁴²
21·1	40·811 ²⁵¹	46·07 ³⁴	24·928 ²³³	25·28 ¹³⁶	32·682 ²⁴³	70·42 ¹¹⁸
31·1	41·013 ²⁰²	46·05 ²	25·116 ¹⁸⁸	24·17 ¹¹¹	32·882 ²⁰⁰	69·51 ⁹¹
Feb. 10·0	41·162 ¹⁴⁹	46·32 ²⁷	25·256 ¹⁴⁰	23·31 ⁸⁶	33·032 ¹⁵⁰	68·87 ⁶⁴
20·0	41·255 ⁹³	46·85 ⁵³	25·346 ⁹⁰	22·71 ⁶⁰	33·132 ¹⁰⁰	68·50 ³⁷
Mar. 1·0	41·295 ⁴⁰	47·60 ⁷⁵	25·388 ⁴²	22·36 ³⁵	33·183 ⁵¹	68·37 ¹³
10·9	41·284 ¹¹	48·50 ⁹⁰	25·384 ⁴	22·23 ¹³	33·189 ⁶	68·47 ¹⁰
20·9	41·229 ⁵⁵	49·50 ¹⁰⁰	25·342 ⁴²	22·29 ⁶	33·154 ³⁵	68·75 ²⁸
30·9	41·139 ⁹⁰	50·54 ¹⁰⁴	25·267 ⁷⁵	22·51 ²²	33·085 ⁶⁹	69·17 ⁴²
Apr. 9·9	41·022 ¹¹⁷	51·56 ¹⁰²	25·168 ⁹⁹	22·86 ³⁵	32·990 ⁹⁵	69·69 ⁵²
19·8	40·887 ¹³⁵	52·52 ⁹⁶	25·053 ¹¹⁵	23·31 ⁴⁵	32·878 ¹¹²	70·28 ⁵⁹
29·8	40·744 ¹⁴³	53·37 ⁸⁵	24·929 ¹²⁴	23·82 ⁵¹	32·756 ¹²²	70·91 ⁶³
May 9·8	40·599 ¹⁴⁵	54·09 ⁷²	24·804 ¹²⁵	24·37 ⁵⁵	32·630 ¹²⁶	71·54 ⁶³
19·8	40·461 ¹³⁸	54·66 ⁵⁷	24·683 ¹²¹	24·95 ⁵⁸	32·509 ¹²¹	72·15 ⁶¹
29·7	40·336 ¹²⁵	55·05 ³⁹	24·573 ¹¹⁰	25·5 ⁵⁸	32·396 ¹¹³	72·72 ⁵⁷
June 8·7	40·228 ¹⁰⁸	55·27 ²²	24·476 ⁹⁷	26·10 ⁵⁷	32·296 ¹⁰⁰	73·24 ⁵²
18·7	40·140 ⁸⁸	55·30 ³	24·396 ⁸⁰	26·61 ⁵⁵	32·211 ⁸⁵	73·70 ⁴⁶
28·6	40·077 ⁶³	55·16 ¹⁴	24·336 ⁶⁰	27·16 ⁵¹	32·146 ⁶⁵	74·08 ³⁸
July 8·6	40·039 ³⁸	54·84 ³²	24·297 ³⁹	27·62 ⁴⁶	32·102 ⁴⁴	74·38 ³⁰
18·6	40·028 ¹¹	54·35 ⁴⁹	24·281 ¹⁶	28·00 ³⁸	32·080 ²²	74·58 ²⁰
28·6	40·046 ¹⁸	53·69 ⁶⁶	24·289 ⁸	28·31 ³¹	32·082 ²	74·67 ⁹
Aug. 7·5	40·093 ⁴⁷	52·87 ⁸²	24·323 ³⁴	28·50 ¹⁹	32·109 ²⁷	74·63 ⁴
17·5	40·169 ⁷⁶	51·88 ⁹⁹	24·382 ⁵⁹	28·56 ⁶	32·163 ⁵⁴	74·46 ¹⁷
27·5	40·277 ¹⁰⁸	50·74 ¹¹⁴	24·470 ⁸⁸	28·46 ¹⁰	32·245 ⁸²	74·11 ³⁵
Sept. 6·5	40·417 ¹⁴⁰	49·44 ¹³⁰	24·588 ¹¹⁸	28·18 ²⁸	32·356 ¹¹¹	73·58 ⁵³
16·4	40·588 ¹⁷¹	47·99 ¹⁴⁵	24·736 ¹⁴⁸	27·70 ⁴⁸	32·498 ¹⁴²	72·86 ⁷²
26·4	40·793 ²⁰⁵	46·41 ¹⁵⁸	24·915 ¹⁷⁹	27·00 ⁷⁰	32·672 ¹⁷⁴	71·93 ⁹³
Oct. 6·4	41·032 ²³⁹	44·72 ¹⁶⁹	25·125 ²¹⁰	26·07 ⁹³	32·878 ²⁰⁶	70·79 ¹¹⁴
16·3	41·302 ²⁷⁰	42·94 ¹⁷⁸	25·367 ²⁴²	24·90 ¹¹⁷	33·117 ²³⁹	69·44 ¹³⁵
26·3	41·603 ³⁰¹	41·09 ¹⁸⁵	25·639 ²⁷²	23·52 ¹³⁸	33·386 ²⁶⁹	67·91 ¹⁵³
Nov. 5·3	41·930 ³²⁷	39·23 ¹⁸⁶	25·936 ²⁹⁷	21·94 ¹⁵⁸	33·682 ²⁹⁶	66·22 ¹⁶⁹
15·3	42·278 ³⁴⁸	37·40 ¹⁸³	26·253 ³¹⁷	20·20 ¹⁷⁴	34·001 ³¹⁹	64·41 ¹⁸¹
25·2	42·640 ³⁶²	35·66 ¹⁷⁴	26·585 ³³²	18·35 ¹⁸⁵	34·335 ³³⁴	62·53 ¹⁸⁸
Dec. 5·2	43·007 ³⁶⁷	34·06 ¹⁶⁰	26·922 ³³⁷	16·45 ¹⁹⁰	34·677 ³⁴²	60·63 ¹⁹⁰
15·2	43·368 ³⁶¹	32·66 ¹⁴⁰	27·255 ³³³	14·55 ¹⁹⁰	35·016 ³³⁹	58·78 ¹⁸⁵
25·2	43·714 ³⁴⁶	31·50 ¹¹⁶	27·574 ³¹⁹	12·73 ¹⁸²	35·343 ³²⁷	57·05 ¹⁷³
35·1	44·033 ³¹⁹	30·64 ⁸⁶	27·868 ²⁹⁴	11·03 ¹⁷⁰	35·646 ³⁰³	55·48 ¹⁵⁷
Mean Place	40·337	48·73	24·568	25·45	32·337	71·34
Sec δ , Tan δ	+0·116	+0·495	+0·011	+0·147	+0·024	+0·218
L α , L δ	+0·01	-0·3	0·00	-0·3	0·00	-0·3
ω α , ω δ	+0·03	+0·5	+0·01	+0·5	+0·01	+0·5
Authority and Catalogue No.	A. N.	603	A. E.	612	A. E.	617

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	<i>q</i> Velorum.		22 Sextantis.		<i>q</i> Carinae.	
	4.09	A 2	5.40	F 0	3.44	K 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 10 ^m II	[°] 41 ['] 45	^h 10 ^m 14	[°] 7 ['] 42	^h 10 ^m 14	[°] 60 ['] 57
Jan. 1.1	42.762 ^s	36.25	02.886 ^s	23.79	41.41 ^s	59.13
11.1	43.063 ³⁰¹	39.37 ³¹²	03.160 ²⁷⁴	26.04 ²²⁵	41.80 ³⁹	62.34 ³²¹
21.1	43.316 ²⁵³	42.67 ³³⁰	03.397 ²³⁷	28.21 ²¹⁷	42.12 ³²	65.85 ³⁵¹
31.1	43.514 ¹⁹⁸	46.05 ³³⁸	03.591 ¹⁹⁴	30.24 ²⁰³	42.37 ²⁵	69.55 ³⁷⁰
Feb. 10.0	43.653 ¹³⁹	49.41 ³³⁶	03.738 ¹⁴⁷	32.08 ¹⁸⁴	42.53 ¹⁶	73.34 ³⁷⁹
20.0	43.733 ⁸⁰	52.67 ³²⁶	03.836 ⁹⁸	33.70 ¹⁶²	42.60 ⁷	77.12 ³⁷⁸
Mar. 1.0	43.756 ²³	55.76 ³⁰⁹	03.887 ⁵¹	35.07 ¹³⁷	42.60 ¹¹²	80.80 ³⁶⁸
11.0	43.726 ³⁰	58.62 ²⁸⁶	03.895 ⁸	36.19 ¹¹²	42.51 ⁹	84.29 ³⁴⁹
20.9	43.647 ⁷⁹	61.18 ²⁵⁶	03.863 ³²	37.05 ⁸⁶	42.35 ¹⁶	87.53 ³²⁴
30.9	43.529 ¹¹⁸	63.42 ²²⁴	03.800 ⁶³	37.67 ⁶²	42.14 ²¹	90.45 ²⁹²
Apr. 9.9	43.379 ¹⁵⁰	65.29 ¹⁸⁷	03.711 ⁸⁹	38.05 ³⁸	41.88 ²⁶	92.99 ²⁵⁴
19.8	43.204 ¹⁷⁵	66.76 ¹⁴⁷	03.604 ¹⁰⁷	38.22 ¹⁷	41.57 ³¹	95.11 ²¹²
29.8	43.013 ¹⁹¹	67.82 ¹⁰⁶	03.486 ¹¹⁸	38.18 ⁴	41.24 ³³	96.77 ¹⁶⁶
May 9.8	42.813 ²⁰⁰	68.46 ⁶⁴	03.364 ¹²²	37.95 ²³	40.88 ³⁶	97.94 ¹¹⁷
19.8	42.611 ²⁰²	68.66 ²⁰	03.243 ¹²¹	37.55 ⁴⁰	40.52 ³⁶	98.61 ⁶⁷
29.7	42.413 ¹⁹⁸	68.44 ²²	03.128 ¹¹⁵	36.98 ⁵⁷	40.15 ³⁷	98.76 ¹⁵
June 8.7	42.223 ¹⁹⁰	67.79 ⁶⁵	03.022 ¹⁰⁶	36.27 ⁷¹	39.80 ³⁵	98.40 ³⁶
18.7	42.048 ¹⁷⁵	66.75 ¹⁰⁴	02.929 ⁹³	35.44 ⁸³	39.46 ³⁴	97.53 ⁸⁷
28.7	41.892 ¹⁵⁶	65.34 ¹⁴¹	02.853 ⁷⁶	34.51 ⁹³	39.14 ³²	96.19 ¹³⁴
July 8.6	41.758 ¹³⁴	63.60 ¹⁷⁴	02.794 ⁵⁹	33.51 ¹⁰⁰	38.87 ²⁷	94.41 ¹⁷⁸
18.6	41.652 ¹⁰⁶	61.58 ²⁰²	02.755 ³⁹	32.46 ¹⁰⁵	38.63 ²⁴	92.25 ²¹⁶
28.6	41.576 ⁷⁶	59.34 ²²⁴	02.739 ¹⁶	31.41 ¹⁰⁵	38.44 ¹⁹	89.76 ²⁴⁹
Aug. 7.5	41.536 ⁴⁰	56.95 ²³⁹	02.747 ⁸	30.40 ¹⁰¹	38.31 ¹³	87.03 ²⁷³
17.5	41.534 ²	54.50 ²⁴⁵	02.781 ³⁴	29.45 ⁹⁵	38.25 ⁶	84.15 ²⁸⁸
27.5	41.575 ⁴¹	52.07 ²⁴³	02.843 ⁶²	28.64 ⁸¹	38.25 ⁸	81.21 ²⁹⁴
Sept. 6.5	41.660 ⁸⁵	49.76 ²³¹	02.935 ⁹²	28.00 ⁶⁴	38.33 ¹⁵	78.33 ²⁸⁸
16.4	41.791 ¹³¹	47.64 ²¹²	03.060 ¹²⁵	27.59 ⁴¹	38.48 ¹⁵	75.59 ²⁷⁴
26.4	41.971 ¹⁸⁰	45.83 ¹⁸¹	03.216 ¹⁵⁶	27.45 ¹⁴	38.71 ²³	73.13 ²⁴⁶
Oct. 6.4	42.197 ²²⁶	44.41 ¹⁴²	03.407 ¹⁹¹	27.61 ¹⁶	39.02 ³¹	71.04 ²⁰⁹
16.4	42.469 ²⁷²	43.45 ⁹⁶	03.633 ²²⁶	28.10 ⁴⁹	39.39 ³⁷	69.41 ¹⁶³
26.3	42.782 ³¹³	43.00 ⁴⁵	03.890 ²⁵⁷	28.93 ⁸³	39.82 ⁴³	68.33 ¹⁰⁸
Nov. 5.3	43.130 ³⁴⁸	43.11 ¹¹	04.176 ²⁸⁶	30.10 ¹¹⁷	40.31 ⁴⁹	67.85 ⁴⁸
15.3	43.503 ³⁷³	43.79 ⁶⁸	04.485 ³⁰⁹	31.59 ¹⁴⁹	40.83 ⁵²	68.00 ¹⁵
25.2	43.891 ³⁸⁸	45.03 ¹²⁴	04.810 ³²⁵	33.37 ¹⁷⁸	41.36 ⁵³	68.80 ⁸⁰
Dec. 5.2	44.284 ³⁹³	46.81 ¹⁷⁸	05.143 ³³³	35.37 ²⁰⁰	41.90 ⁵⁴	70.24 ¹⁴⁴
15.2	44.668 ³⁸⁴	49.08 ²²⁷	05.473 ³³⁰	37.55 ²¹⁸	42.43 ⁵³	72.26 ²⁰²
25.2	45.031 ³⁶³	51.74 ²⁶⁶	05.791 ³¹⁸	39.82 ²²⁷	42.92 ⁴⁹	74.82 ²⁵⁶
35.1	45.361 ³³⁰	54.73 ²⁹⁹	06.086 ²⁹⁵	42.12 ²³⁰	43.35 ⁴³	77.81 ²⁹⁹
Mean Place	42.601	52.78	03.082	31.21	40.607	79.62
Sec δ , Tan δ	1.341	-0.893	1.009	-0.135	2.061	-1.802
L α , L δ	-0.01	-0.4	0.00	-0.4	-0.02	-0.4
ω α , ω δ	-0.05	+0.5	-0.01	+0.5	-0.11	+0.4
Authority and Catalogue No.	A. E.	619		624		625

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ^1 Leonis.		μ Ursæ Majoris.		μ Hydræ.	
	2.61	K 0	3.21	K 5	4.06	K 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 10 ^m 16	[°] 20 ['] 12	^h 10 ^m 18	[°] 41 ['] 51	^h 10 ^m 22	[°] 16 ['] 27
Jan. 1.2	00.109 ⁵	22.16 ¹¹²	02.724 ³⁶⁵	38.33 ¹⁴	36.184 ²⁸¹	55.30 ²⁵⁵
11.1	00.410 ²⁶⁵	21.04 ⁸²	03.089 ³²¹	38.19 ²⁸	36.465 ²⁴³	57.85 ²⁵³
21.1	00.675 ²²⁰	20.22 ⁵¹	03.410 ²⁶⁸	38.47 ⁶⁹	36.708 ²⁰⁰	60.38 ²⁴⁶
31.1	00.895	19.71	03.678	39.16	36.908	62.84
Feb. 10.0	01.065 ¹⁷⁰	19.51 ²⁰	03.886 ²⁰⁸	40.22 ¹⁰⁶	37.061 ¹⁵³	65.15 ²³¹
20.0	01.183 ¹¹⁸	19.59 ⁸	04.030 ¹⁴⁴	41.58 ¹³⁶	37.165 ¹⁰⁴	67.27 ²¹²
Mar. 1.0	01.250 ⁶⁷	19.94 ³⁵	04.110 ⁸⁰	43.17 ¹⁵⁹	37.221 ⁵⁶	69.17 ¹⁹⁰
11.0	01.269 ¹⁹	20.49 ⁵⁵	04.129 ¹⁹	44.92 ¹⁷⁵	37.232 ¹¹	70.81 ¹⁶⁴
20.9	01.245 ²⁴	21.20 ⁷¹	04.092 ³⁷	46.73 ¹⁸¹	37.204 ²⁸	72.19 ¹³⁸
30.9	01.184 ⁶¹	22.02 ⁸²	04.007 ⁸⁵	48.51 ¹⁷⁸	37.142 ⁶²	73.29 ¹¹⁰
Apr. 9.9	01.095 ⁸⁹	22.90 ⁸⁸	03.884 ¹²³	50.20 ¹⁶⁹	37.053 ⁸⁹	74.11 ⁸²
19.9	00.985 ¹¹⁰	23.78 ⁸⁸	03.732 ¹⁵²	51.72 ¹⁵²	36.945 ¹⁰⁸	74.66 ⁵⁵
29.8	00.863 ¹²²	24.63 ⁸⁵	03.562 ¹⁷⁰	53.01 ¹²⁹	36.824 ¹²¹	74.94 ²⁸
May 9.8	00.736 ¹²⁷	25.41 ⁷⁸	03.384 ¹⁷⁸	54.03 ¹⁰²	36.696 ¹²⁸	74.96 ²
19.8	00.610 ¹²⁶	26.08 ⁶⁷	03.205 ¹⁷⁹	54.75 ⁷²	36.568 ¹²⁸	74.73 ²³
29.7	00.492 ¹¹⁸	26.65 ⁵⁷	03.035 ¹⁷⁰	55.15 ⁴⁰	36.444 ¹²⁴	74.27 ⁴⁶
June 8.7	00.385 ¹⁰⁷	27.08 ⁴³	02.879 ¹⁵⁶	55.22 ⁷	36.328 ¹¹⁶	73.59 ⁶⁸
18.7	00.293 ⁹²	27.38 ³⁰	02.742 ¹³⁷	54.97 ⁴⁵	36.222 ¹⁰⁶	72.71 ⁸⁸
28.7	00.219 ⁷⁴	27.52 ¹⁴	02.630 ¹¹²	54.46 ⁵⁷	36.132 ⁹⁰	71.65 ¹⁰⁶
July 8.6	00.167 ⁵²	27.51 ¹	02.545 ⁸⁵	53.52 ⁸⁸	36.059 ⁷³	70.44 ¹²¹
18.6	00.136 ³¹	27.35 ¹⁶	02.490 ⁵⁵	52.36 ¹¹⁶	36.006 ⁵³	69.12 ¹³²
28.6	00.130 ⁶	27.02 ³³	02.467 ²³	50.93 ¹⁴³	35.974 ³²	67.74 ¹³⁸
Aug. 7.6	00.148 ¹⁸	26.52 ⁵⁰	02.478 ¹¹	49.27 ¹⁶⁶	35.967 ⁷	66.34 ¹⁴⁰
17.5	00.194 ⁴⁶	25.86 ⁶⁶	02.523 ⁴⁵	47.40 ¹⁸⁷	35.987 ²⁰	64.98 ¹³⁶
27.5	00.269 ⁷⁵	25.02 ⁸⁴	02.607 ⁸⁴	45.34 ²⁰⁶	36.036 ⁴⁹	63.71 ¹²⁷
Sept. 6.5	00.374 ¹⁰⁵	23.99 ¹⁰³	02.729 ¹²²	43.13 ²²¹	36.116 ⁸⁰	62.59 ¹¹²
16.4	00.511 ¹³⁷	22.79 ¹²⁰	02.890 ¹⁶¹	40.80 ²³³	36.231 ¹¹⁵	61.70 ⁸⁹
26.4	00.681 ¹⁷⁰	21.40 ¹³⁹	03.093 ²⁰³	38.38 ²⁴²	36.381 ¹⁵⁰	61.08 ⁶²
Oct. 6.4	00.886 ²⁰⁵	19.84 ¹⁵⁶	03.337 ²⁴⁴	35.92 ²⁴⁶	36.567 ¹⁸⁶	60.79 ²⁹
16.4	01.125 ²³⁹	18.14 ¹⁷⁰	03.622 ²⁸⁵	33.45 ²⁴⁷	36.790 ²²³	60.87 ⁸
26.3	01.397 ²⁷²	16.30 ¹⁸⁴	03.946 ³²⁴	31.04 ²⁴¹	37.047 ²⁵⁷	61.34 ⁴⁷
Nov. 5.3	01.699 ³⁰²	14.38 ¹⁹²	04.306 ³⁶⁰	28.73 ²³¹	37.334 ²⁸⁷	62.21 ⁸⁷
15.3	02.026 ³²⁷	12.41 ¹⁹⁷	04.696 ³⁹⁰	26.60 ²¹³	37.646 ³¹²	63.48 ¹²⁷
25.3	02.371 ³⁴⁵	10.46 ¹⁹⁵	05.108 ⁴¹²	24.70 ¹⁹⁰	37.975 ³²⁹	65.12 ¹⁶⁴
Dec. 5.2	02.726 ³⁵⁵	08.58 ¹⁸⁸	05.532 ⁴²⁴	23.10 ¹⁶⁰	38.313 ³³⁸	67.08 ¹⁹⁶
15.2	03.080 ³⁵⁴	06.83 ¹⁷⁵	05.958 ⁴²⁶	21.85 ¹²⁵	38.649 ³³⁶	69.31 ²²³
25.2	03.424 ³⁴⁴	05.27 ¹⁵⁶	06.372 ⁴¹⁴	20.98 ⁸⁷	38.974 ³²⁵	71.73 ²⁴²
35.1	03.746 ³²²	03.96 ¹³¹	06.761 ³⁸⁹	20.54 ⁴⁴	39.276 ³⁰²	74.26 ²⁵³
Mean Place	00.321	22.69	02.784	44.06	36.386	65.43
Sec δ , Tan δ	1.066	+0.368	1.343	+0.896	1.043	-0.296
L α , L δ	0.00	-0.4	+0.01	-0.4	0.00	-0.4
ω α , ω δ	+0.02	+0.4	+0.05	+0.4	-0.02	+0.4
Authority and Catalogue No.	627		A. E. 628		A. E. 633	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Antliae.		ρ Leonis.		34 Sextantis.	
	4.42	K 5	3.85	B o ϕ	6.63	F 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 10 ^m 23	[°] 30 ['] 41	^h 10 ^m 29	[°] 9 ['] 40	^h 10 ^m 38	[°] 3 ['] 57
Jan. 1.2	51.143 ⁵	47.58 ²⁸⁹	00.958 ⁵	41.86 ¹⁶²	54.070 ⁵	39.14 ¹⁸⁸
11.1	51.436 ²⁹³	50.47 ³⁰⁰	01.252 ²⁹⁴	40.24 ¹⁴¹	54.364 ²⁹⁴	37.26 ¹⁷⁰
21.1	51.688 ²⁵²	53.47 ³⁰¹	01.511 ²⁵⁹	38.83 ¹¹⁵	54.626 ²⁶²	35.56 ¹⁴⁸
31.1	51.893 ²⁰⁵	56.48 ³⁰¹	01.729 ²¹⁸	37.68 ¹¹⁵	54.848 ²²²	34.08 ¹⁴⁸
Feb. 10.0	52.046 ¹⁵³	59.44 ²⁹⁶	01.901 ¹⁷²	36.81 ⁸⁷	55.025 ¹⁷⁷	32.85 ¹²³
20.0	52.147 ¹⁰¹	62.27 ²⁸³	02.025 ¹²⁴	36.22 ⁵⁹	55.154 ¹²⁹	31.89 ⁹⁶
Mar. 1.0	52.196 ⁴⁹	64.91 ²⁶⁴	02.100 ⁷⁵	35.89 ³³	55.236 ⁸²	31.19 ⁷⁰
11.0	52.197 ¹	67.31 ²⁴⁰	02.130 ³⁰	35.80 ⁹	55.274 ³⁸	30.74 ⁴⁵
20.9	52.155 ⁴²	69.43 ²¹²	02.118 ¹²	35.93 ¹³	55.271 ³	30.52 ²²
30.9	52.077 ⁷⁸	71.24 ¹⁸¹	02.071 ⁴⁷	36.22 ²⁹	55.234 ³⁷	30.51 ¹
Apr. 9.9	51.969 ¹⁰⁸	72.72 ¹⁴⁸	01.998 ⁷³	36.65 ⁴³	55.168 ⁶⁶	30.67 ¹⁶
19.9	51.839 ¹³⁰	73.87 ¹¹⁵	01.904 ⁹⁴	37.18 ⁵³	55.081 ⁸⁷	30.97 ³⁰
29.8	51.694 ¹⁴⁵	74.66 ⁷⁹	01.796 ¹⁰⁸	37.77 ⁵⁹	54.980 ¹⁰¹	31.39 ⁴²
May 9.8	51.540 ¹⁵⁴	75.09 ⁴³	01.682 ¹¹⁴	38.39 ⁶²	54.871 ¹⁰⁹	31.88 ⁴⁹
19.8	51.384 ¹⁵⁶	75.16 ⁷	01.567 ¹¹⁵	39.02 ⁶³	54.760 ¹¹¹	31.88 ⁵⁶
29.7	51.231 ¹⁵³	74.88 ²⁸	01.456 ¹¹¹	39.64 ⁶²	54.651 ¹⁰⁹	32.44 ⁶⁰
June 8.7	51.084 ¹⁴⁷	74.25 ⁶³	01.354 ¹⁰²	40.22 ⁵⁸	54.549 ¹⁰²	33.66 ⁶²
18.7	50.948 ¹³⁶	73.31 ⁹⁴	01.263 ⁹¹	40.76 ⁵⁴	54.456 ⁹³	34.29 ⁶³
28.7	50.827 ¹²¹	72.08 ¹²³	01.188 ⁷⁵	41.24 ⁴⁸	54.376 ⁸⁰	34.91 ⁶²
July 8.6	50.725 ¹⁰²	70.58 ¹⁵⁰	01.130 ⁵⁸	41.64 ⁴⁰	54.312 ⁶⁴	35.50 ⁵⁹
18.6	50.644 ⁸¹	68.88 ¹⁷⁰	01.090 ⁴⁰	41.95 ³¹	54.264 ⁴⁸	36.04 ⁵⁴
28.6	50.588 ⁵⁶	67.01 ¹⁸⁷	01.071 ¹⁹	42.15 ²⁰	54.236 ²⁸	36.50 ⁴⁶
Aug. 7.6	50.560 ²⁸	65.03 ¹⁹⁸	01.076 ⁵	42.23 ⁸	54.229 ⁷	36.86 ³⁶
17.5	50.563 ³	63.03 ²⁰⁰	01.105 ²⁹	42.17 ⁶	54.247 ¹⁸	37.11 ²⁵
27.5	50.600 ³⁷	61.07 ¹⁹⁶	01.160 ⁵⁵	41.94 ²³	54.291 ⁴⁴	37.20 ⁹
Sept. 6.5	50.675 ⁷⁵	59.23 ¹⁸⁴	01.245 ⁸⁵	41.52 ⁴²	54.363 ⁷²	37.11 ⁹
16.4	50.789 ¹¹⁴	57.60 ¹⁶³	01.362 ¹¹⁷	40.89 ⁶³	54.467 ¹⁰⁴	36.81 ³⁰
26.4	50.944 ¹⁵⁵	56.26 ¹³⁴	01.510 ¹⁴⁸	40.05 ⁸⁴	54.604 ¹³⁷	36.28 ⁵³
Oct. 6.4	51.140 ¹⁹⁶	55.26 ¹⁰⁰	01.693 ¹⁸³	38.98 ¹⁰⁷	54.775 ¹⁷¹	35.49 ⁷⁹
16.4	51.377 ²³⁷	54.68 ⁵⁸	01.912 ²¹⁹	37.68 ¹³⁰	54.983 ²⁰⁸	34.45 ¹⁰⁴
26.3	51.652 ²⁷⁵	54.58 ¹⁰	02.163 ²⁵¹	36.17 ¹⁵¹	55.224 ²⁴¹	33.14 ¹³¹
Nov. 5.3	51.960 ³⁰⁸	54.96 ³⁸	02.445 ²⁸²	34.47 ¹⁷⁰	55.498 ²⁷⁴	31.59 ¹⁵⁵
15.3	52.294 ³³⁴	55.85 ⁸⁹	02.753 ³⁰⁸	32.61 ¹⁸⁶	55.798 ³⁰⁰	29.84 ¹⁷⁵
25.3	52.647 ³⁵³	57.22 ¹³⁷	03.081 ³²⁸	30.65 ¹⁹⁶	56.120 ³²²	27.92 ¹⁹²
Dec. 5.2	53.007 ³⁶⁰	59.04 ¹⁸²	03.420 ³³⁹	28.65 ²⁰⁰	56.454 ³³⁴	25.89 ²⁰³
15.2	53.364 ³⁵⁷	61.27 ²²³	03.761 ³⁴¹	26.66 ¹⁹⁹	56.791 ³³⁷	23.80 ²⁰⁹
25.2	53.707 ³⁴³	63.82 ²⁵⁵	04.093 ³³²	24.75 ¹⁹¹	57.121 ³³⁰	21.74 ²⁰⁶
35.1	54.023 ³¹⁶	66.62 ²⁸⁰	04.406 ³¹³	22.98 ¹⁷⁷	57.434 ³¹³	19.76 ¹⁹⁸
Mean Place	51.239	61.77	01.253	39.51	54.413	35.07
Sec δ , Tan δ	1.163	-0.594	1.014	+0.171	1.002	+0.069
L a , L δ	-0.01	-0.4	0.00	-0.4	0.00	-0.4
ω a , ω δ	-0.04	+0.4	+0.01	+0.4	+0.01	+0.3
Authority and Catalogue No.	A. E.	636	A. N.	641		654

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	θ Argus.		η Argus.		μ Argus.	
	3.03	B 0	Var.	Pec.	2.86	G 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ₁₀ ^m ₄₀	^o ₆₄ ['] ₀₀	^h ₁₀ ^m ₄₂	^o ₅₉ ['] ₁₇	^h ₁₀ ^m ₄₃	^o ₄₉ ['] ₀₂
Jan. 1.2	23.62 ^s	38.20 ["]	16.082 ^s	58.60 ["]	40.118 ^s	01.78 ["]
11.1	24.09 ⁴⁷	41.19 ²⁹⁹	16.504 ⁴²²	61.59 ²⁹⁹	40.478 ³⁶⁰	04.78 ³⁰⁰
21.1	24.48 ³⁹	44.54 ³³⁵	16.865 ³⁶¹	64.92 ³³³	40.789 ³¹¹	08.04 ³²⁶
31.1	24.80 ³²	48.15 ³⁶¹	17.156 ²⁹¹	68.49 ³⁵⁷	41.044 ²⁵⁵	11.47 ³⁴³
Feb. 10.1	25.03 ²³	51.91 ³⁷⁶	17.370 ²¹⁴	72.19 ³⁷⁰	41.237 ¹⁹³	14.99 ³⁵²
20.0	25.16 ¹³	55.72 ³⁸¹	17.505 ¹³⁵	75.93 ³⁷⁴	41.367 ¹³⁰	18.49 ³⁵⁰
Mar. 1.0	25.21 ⁵	59.50 ³⁷⁸	17.562 ⁵⁷	79.62 ³⁶⁹	41.433 ⁶⁶	21.90 ³⁴¹
11.0	25.17 ⁴	63.16 ³⁶⁶	17.545 ¹⁷	83.17 ³⁵⁵	41.439 ⁶	25.14 ³²⁴
20.9	25.06 ¹¹	66.62 ³⁴⁶	17.460 ⁸⁵	86.51 ³³⁴	41.391 ⁴⁸	28.14 ³⁰⁰
30.9	24.88 ¹⁸	69.80 ³¹⁸	17.314 ¹⁴⁶	89.57 ³⁰⁶	41.295 ⁹⁶	30.86 ²⁷²
Apr. 9.9	24.63 ²⁵	72.65 ²⁸⁵	17.116 ¹⁹⁸	92.30 ²⁷³	41.158 ¹³⁷	33.23 ²³⁷
19.9	24.33 ³⁰	75.11 ²⁴⁶	16.873 ²⁴³	94.64 ²³⁴	40.988 ¹⁷⁰	35.23 ²⁰⁰
29.8	23.99 ³⁴	77.14 ²⁰³	16.596 ²⁷⁷	96.55 ¹⁹¹	40.792 ¹⁹⁶	36.82 ¹⁵⁹
May 9.8	23.62 ³⁷	78.69 ¹⁵⁵	16.293 ³⁰³	98.01 ¹⁴⁶	40.578 ²¹⁴	37.98 ¹¹⁶
19.8	23.23 ³⁹	79.76 ¹⁰⁷	15.974 ³¹⁹	98.98 ⁸⁷	40.352 ²²⁶	38.70 ⁷²
29.8	22.83 ⁴⁰	80.31 ⁵⁵	15.646 ³²⁸	99.45 ⁴²	40.121 ²³¹	38.96 ²⁶
June 8.7	22.43 ⁴⁰	80.34 ³	15.318 ³²⁸	99.41 ⁺	39.893 ²²⁸	38.76 ²⁰
18.7	22.03 ⁴⁰	79.86 ⁴⁸	14.997 ³²¹	98.87 ¹¹⁴	39.672 ²²¹	38.11 ⁶⁵
28.7	21.66 ³⁷	78.87 ⁹⁹	14.693 ³⁰⁴	97.85 ¹⁰²	39.463 ²⁰⁹	37.03 ¹⁰⁸
July 8.6	21.32 ³⁴	77.41 ¹⁴⁶	14.414 ²⁷⁹	96.38 ¹⁴⁷	39.273 ¹⁹⁰	35.56 ¹⁴⁷
18.6	21.01 ³¹	75.52 ¹⁸⁹	14.167 ²⁴⁷	94.50 ¹⁸⁸	39.108 ¹⁶⁵	33.74 ¹⁸²
28.6	20.75 ²⁶	73.26 ²²⁶	13.960 ²⁰⁷	92.27 ²²³	38.973 ¹³⁵	31.61 ²¹³
Aug. 7.6	20.56 ¹⁹	70.69 ²⁵⁷	13.803 ¹⁵⁷	89.76 ²⁵¹	38.874 ⁹⁹	29.26 ²³⁵
17.5	20.43 ¹³	67.91 ²⁷⁸	13.701 ¹⁰²	87.04 ²⁷²	38.816 ⁵⁸	26.76 ²⁵⁰
27.5	20.37 ⁶	65.00 ²⁹¹	13.663 ³⁹	84.22 ²⁸²	38.804 ¹²	24.18 ²⁵⁸
Sept. 6.5	20.39 ²	62.07 ²⁹³	13.692 ³⁰	81.39 ²⁸³	38.844 ⁴⁰	21.64 ²⁵⁴
16.5	20.50 ¹¹	59.23 ²⁸⁴	13.794 ¹⁰²	78.66 ²⁷³	38.939 ⁹⁵	19.23 ²⁴¹
26.4	20.70 ²⁰	56.59 ²⁶⁴	13.971 ¹⁷⁷	76.14 ²⁵²	39.091 ¹⁵²	17.05 ²¹⁸
Oct. 6.4	20.99 ²⁹	54.25 ²³⁴	14.222 ²⁵¹	73.94 ²²⁰	39.300 ²⁰⁹	15.18 ¹⁸⁷
16.4	21.35 ³⁶	52.33 ¹⁹²	14.545 ³²³	72.15 ¹⁷⁹	39.565 ²⁶⁵	13.74 ¹⁴⁴
26.3	21.79 ⁴⁴	50.91 ¹⁴²	14.932 ³⁸⁷	70.86 ¹²⁹	39.883 ³¹⁸	12.79 ⁹⁵
Nov. 5.3	22.30 ⁵¹	50.07 ⁸⁴	15.375 ⁴⁴³	70.14 ⁷²	40.246 ³⁶³	12.39 ⁴⁰
15.3	22.85 ⁵⁵	49.84 ²³	15.861 ⁴⁸⁶	70.02 ¹²	40.645 ³⁹⁹	12.57 ¹⁸
25.3	23.43 ⁵⁸	50.26 ⁴²	16.376 ⁵¹⁵	70.54 ⁵²	41.071 ⁴²⁶	13.34 ⁷⁷
Dec. 5.2	24.02 ⁵⁹	51.32 ¹⁰⁶	16.902 ⁵²⁶	71.69 ¹¹⁵	41.507 ⁴³⁶	14.70 ¹³⁶
15.2	24.61 ⁵⁹	53.01 ¹⁶⁹	17.422 ⁵²⁰	73.43 ¹⁷⁴	41.941 ⁴³⁴	16.60 ¹⁹⁰
25.2	25.17 ⁵⁶	55.26 ²²⁵	17.920 ⁴⁹⁸	75.73 ²³⁰	42.359 ⁴¹⁸	18.99 ²³⁹
35.2	25.68 ⁵¹	58.00 ²⁷⁴	18.378 ⁴⁵⁸	78.50 ²⁷⁷	42.747 ³⁸⁸	21.79 ²⁸⁰
Mean Place	23.022	60.37	15.742	80.04	40.098	21.20
Sec δ , Tan δ	2.283	-2.052	1.959	-1.685	1.525	-1.152
L α , L δ	-0.02	-0.4	-0.01	-0.4	-0.01	-0.4
ω α , ω δ	-0.13	+0.3	-0.11	+0.3	-0.07	+0.3
Authority and Catalogue No.	A. E.	656		658	A. E.	660

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	♌ Leonis.		♋ Hydræ.		♏ Antliæ.	
	5.27	A o	3.32	K o	4.70	K o
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 10 45	[°] 10 55	^h 10 46	[°] 15 48	^h 10 53	[°] 36 44
Jan. 1.2	28.025 ^s	37.93 ["]	03.875 ^s	48.78 ["]	21.235 ^s	44.11 ["]
11.1	28.330 ³⁰⁵	36.28 ¹⁶⁵	04.171 ²⁹⁶	51.27 ²⁴⁹	21.562 ³²⁷	46.95 ²⁸⁴
21.1	28.602 ²⁷²	34.87 ¹⁴¹	04.433 ²⁶²	53.75 ²⁴⁸	21.851 ²⁸⁹	49.98 ³⁰³
31.1	28.835 ²³³	33.73 ¹¹⁴	04.655 ²²²	56.16 ²⁴¹	22.094 ²⁴³	53.11 ³¹³
Feb. 10.1	29.024 ¹⁸⁹	32.88 ⁸⁵	04.832 ¹⁷⁷	58.45 ²²⁹	22.286 ¹⁹²	56.25 ³¹⁴
20.0	29.165 ¹⁴¹	32.32 ⁵⁶	04.962 ¹³⁰	60.55 ²¹⁰	22.424 ¹³⁸	59.33 ³⁰⁸
Mar. 1.0	29.258 ⁹³	32.04 ²⁸	05.044 ⁸²	62.44 ¹⁸⁹	22.509 ⁸⁵	62.28 ²⁹⁵
11.0	29.304 ⁴⁶	32.02 ²	05.082 ³⁸	64.08 ¹⁶⁴	22.543 ³⁴	65.03 ²⁷⁵
21.0	29.309 ⁵	32.21 ¹⁹	05.079 ³	65.47 ¹³⁹	22.531 ¹²	67.56 ²⁵³
30.9	29.278 ³¹	32.58 ³⁷	05.041 ³⁸	66.60 ¹¹³	22.479 ⁵²	69.80 ²²⁴
Apr. 9.9	29.217 ⁶¹	33.09 ⁵¹	04.975 ⁶⁶	67.45 ⁸⁵	22.392 ⁸⁷	71.72 ¹⁹²
19.9	29.133 ⁸⁴	33.70 ⁶¹	04.887 ⁸⁸	68.04 ⁵⁹	22.276 ¹¹⁶	73.30 ¹⁵⁸
29.8	29.034 ⁹⁹	34.36 ⁶⁶	04.782 ¹⁰⁵	68.38 ³⁴	22.140 ¹³⁶	74.52 ¹²²
May 9.8	28.926 ¹⁰⁸	35.04 ⁶⁸	04.668 ¹¹⁴	68.48 ¹⁰	21.989 ¹⁵¹	75.37 ⁸⁵
19.8	28.814 ¹¹²	35.72 ⁶⁸	04.550 ¹¹⁸	68.33 ¹⁵	21.828 ¹⁶¹	75.83 ⁴⁶
29.8	28.704 ¹¹⁰	36.37 ⁶⁵	04.431 ¹¹⁹	67.96 ³⁷	21.664 ¹⁶⁴	75.91 ⁸
June 8.7	28.600 ¹⁰⁴	36.97 ⁶⁰	04.317 ¹¹⁴	67.38 ⁵⁸	21.501 ¹⁶³	75.62 ²⁹
18.7	28.505 ⁹⁵	37.50 ⁵³	04.210 ¹⁰⁷	66.61 ⁷⁷	21.343 ¹⁵⁸	74.96 ⁶⁶
28.7	28.423 ⁸²	37.96 ⁴⁶	04.113 ⁹⁷	65.67 ⁹⁴	21.195 ¹⁴⁸	73.95 ¹⁰¹
July 8.7	28.356 ⁶⁷	38.32 ³⁶	04.030 ⁸³	64.58 ¹⁰⁹	21.060 ¹³⁵	72.63 ¹³²
18.6	28.305 ⁵¹	38.58 ²⁶	03.963 ⁶⁷	63.39 ¹¹⁹	20.943 ¹¹⁷	71.02 ¹⁶¹
28.6	28.273 ³²	38.71 ¹³	03.915 ⁴⁸	62.12 ¹²⁷	20.848 ⁹⁵	69.20 ¹⁸²
Aug. 7.6	28.263 ¹⁰	38.71 ²⁶	03.889 ²⁶	60.83 ¹²⁹	20.781 ⁶⁷	67.20 ²⁰⁰
17.5	28.277 ¹⁴	38.56 ¹⁵	03.888 ¹	59.55 ¹²⁸	20.744 ³⁷	65.10 ²¹⁰
27.5	28.318 ⁴¹	38.23 ³³	03.915 ²⁷	58.36 ¹¹⁹	20.743 ¹	62.98 ²¹²
Sept. 6.5	28.387 ⁶⁹	37.71 ⁵²	03.973 ⁵⁸	57.31 ¹⁰⁵	20.781 ³⁸	60.92 ²⁰⁶
16.5	28.486 ⁹⁹	36.99 ⁷²	04.064 ⁹¹	56.46 ⁸⁵	20.862 ⁸¹	59.00 ¹⁹²
26.4	28.620 ¹³⁴	36.05 ⁹⁴	04.192 ¹²⁸	55.86 ⁶⁰	20.989 ¹²⁷	57.33 ¹⁶⁷
Oct. 6.4	28.789 ¹⁶⁹	34.88 ¹¹⁷	04.358 ¹⁶⁶	55.56 ³⁰	21.164 ¹⁷⁵	55.97 ¹³⁶
16.4	28.994 ²⁰⁵	33.49 ¹³⁹	04.562 ²⁰⁴	55.62 ⁶	21.386 ²²²	54.99 ⁹⁸
26.4	29.234 ²⁴⁰	31.89 ¹⁶⁰	04.803 ²⁴¹	56.05 ⁴³	21.652 ²⁶⁶	54.47 ⁵²
Nov. 5.3	29.506 ²⁷²	30.10 ¹⁷⁹	05.077 ²⁷⁴	56.86 ⁸¹	21.958 ³⁰⁶	54.45 ²
15.3	29.808 ³⁰²	28.18 ¹⁹²	05.381 ³⁰⁴	58.07 ¹²¹	22.299 ³⁴¹	54.94 ⁴⁹
25.3	30.132 ³²⁴	26.15 ²⁰³	05.706 ³²⁵	59.64 ¹⁵⁷	22.664 ³⁶⁵	55.96 ¹⁰²
Dec. 5.2	30.471 ³³⁹	24.09 ²⁰⁶	06.044 ³³⁸	61.52 ¹⁸⁸	23.044 ³⁸⁰	57.48 ¹⁵²
15.2	30.814 ³⁴³	22.05 ²⁰⁴	06.385 ³⁴¹	63.67 ²¹⁵	23.425 ³⁸¹	59.46 ¹⁹⁸
25.2	31.153 ³³⁹	20.10 ¹⁹⁵	06.718 ³³³	66.02 ²³⁵	23.797 ³⁷²	61.83 ²³⁷
35.2	31.475 ³²²	18.31 ¹⁷⁹	07.033 ³¹⁵	68.49 ²⁴⁷	24.147 ³⁵⁰	64.54 ²⁷¹
Mean Place	28.398	36.02	04.219	59.10	21.489	60.74
Sec δ, Tan δ	1.018	+0.193	1.039	-0.283	1.248	-0.747
L α, L δ	0.00	-0.4	0.00	-0.4	-0.01	-0.4
ω α, ω δ	+0.01	+0.3	-0.02	+0.3	-0.05	+0.3
Authority and Catalogue No.	A. E.	662	A. N.	663	A. N.	668

APPARENT PLACES OF STARS, 1928. 343
AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	<i>δ</i> Leonis.		<i>β</i> Ursæ Majoris.		<i>α</i> Ursæ Majoris.	
	5°05	Ko	2°44	Ao	1°95	Ko
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 10 56	^o ['] 4 00	^h ^m 10 57	^o ['] 56 45	^h ^m 10 59	^o ['] 62 07
Jan. 1·2	50°090 ^s	20°20 ^s	30°493 ^s	58°14 ^s	18°10 ^s	73°93 ^s
11·2	50°394 ³⁰⁴	18°27 ¹⁹³	30°990 ⁴⁹⁷	58°19 ⁵	18°67 ⁵⁷	74°14 ²¹
21·1	50°667 ²⁷³	16°53 ¹⁷⁴	31°441 ⁴⁵¹	58°77 ⁵⁸	19°18 ⁵¹	74°92 ⁷⁸
31·1	50°904 ²³⁷	15°00 ¹⁵³	31°833 ³⁹²	59°86 ¹⁰⁹	19°63 ⁴⁵	76°22 ¹³⁰
Feb. 10·1	51°097 ¹⁹³	13°74 ¹²⁶	32°154 ³²¹	61°42 ¹⁵⁶	20°00 ³⁷	77°99 ¹⁷⁷
20·0	51°245 ¹⁴⁸	12°73 ¹⁰¹	32°397 ²⁴³	63°35 ¹⁹³	20°28 ²⁸	80°13 ²¹⁴
Mar. 1·0	51°346 ¹⁰¹	12°01 ⁷²	32°557 ¹⁶⁰	65°57 ²²²	20°46 ¹⁸	82°56 ²⁴³
11·0	51°402 ⁵⁶	11°54 ⁴⁷	32°635 ⁷⁸	67°99 ²⁴²	20°54 ⁸	85°17 ²⁶¹
21·0	51°417 ¹⁵	11°31 ²³	32°634 ¹	70°48 ²⁴⁹	20°53 ¹	87°82 ²⁶⁵
30·9	51°397 ²⁰	11°29 ²	32°562 ⁷²	72°94 ²⁴⁶	20°44 ⁹	90°44 ²⁶²
Apr. 9·9	51°347 ⁵⁰	11°45 ¹⁶	32°429 ¹³³	75°27 ²³³	20°27 ¹⁷	92°90 ²⁴⁶
19·9	51°274 ⁷³	11°76 ³¹	32°246 ¹⁸³	77°39 ²¹²	20°05 ²²	95°10 ²²⁰
29·9	51°184 ⁹⁰	12°18 ⁴²	32°024 ²²²	79°20 ¹⁸¹	19°78 ²⁷	96°97 ¹⁸⁷
May 9·8	51°084 ¹⁰⁰	12°69 ⁵¹	31°776 ²⁴⁸	80°65 ¹⁴⁵	19°48 ³⁰	98°46 ¹⁴⁹
19·8	50°979 ¹⁰⁵	13°26 ⁵⁷	31°515 ²⁶¹	81°70 ¹⁰⁵	19°15 ³³	99°50 ¹⁰⁴
29·8	50°873 ¹⁰⁶	13°86 ⁶⁰	31°250 ²⁶⁵	82°32 ⁶²	18°82 ³³	100°07 ⁵⁷
June 8·7	50°770 ¹⁰³	14°49 ⁶³	30°992 ²⁵⁸	82°48 ¹⁶	18°50 ³²	100°15 ⁸
18·7	50°675 ⁹⁵	15°11 ⁶²	30°749 ²⁴³	82°20 ²⁸	18°20 ³⁰	99°75 ⁴⁰
28·7	50°590 ⁸⁵	15°72 ⁶¹	30°528 ²²¹	81°47 ⁷³	17°92 ²⁸	98°89 ⁸⁶
July 8·7	50°517 ⁷³	16°29 ⁵⁷	30°337 ¹⁹¹	80°33 ¹¹⁴	17°67 ²⁵	97°57 ¹³²
18·6	50°459 ⁵⁸	16°80 ⁵¹	30°179 ¹⁵⁸	78°77 ¹⁵⁶	17°47 ²⁰	95°84 ¹⁷³
28·6	50°418 ⁴¹	17°25 ⁴⁵	30°061 ¹¹⁸	76°86 ¹⁹¹	17°32 ¹⁵	93°73 ²¹¹
Aug. 7·6	50°396 ²²	17°59 ³⁴	29°985 ⁷⁶	74°62 ²²⁴	17°21 ¹¹	91°28 ²⁴⁵
17·6	50°397 ¹	17°81 ²²	29°955 ³⁰	72°10 ²⁵²	17°16 ⁵	88°54 ²⁷⁴
27·5	50°424 ²⁷	17°87 ⁶	29°974 ¹⁹	69°34 ²⁷⁶	17°16 [—]	85°57 ²⁹⁷
Sept. 6·5	50°478 ⁵⁴	17°75 ¹²	30°046 ⁷²	66°39 ²⁹⁵	17°23 ⁷	82°42 ³¹⁵
16·5	50°565 ⁸⁷	17°42 ³³	30°173 ¹²⁷	63°31 ³⁰⁸	17°37 ¹⁴	79°14 ³²⁸
26·4	50°685 ¹²⁰	16°87 ⁵⁵	30°356 ¹⁸³	60°14 ³¹⁷	17°57 ²⁰	75°80 ³³⁴
Oct. 6·4	50°840 ¹⁵⁵	16°06 ⁸¹	30°599 ²⁴³	56°95 ³¹⁹	17°84 ²⁷	72°46 ³³⁴
16·4	51°032 ¹⁹²	14°99 ¹⁰⁷	30°900 ³⁰¹	53°81 ³¹⁴	18°18 ³⁴	69°19 ³²⁷
26·4	51°261 ²²⁹	13°66 ¹³³	31°259 ³⁵⁹	50°78 ³⁰³	18°58 ⁴⁰	66°08 ³¹¹
Nov. 5·3	51°523 ²⁶²	12°10 ¹⁵⁶	31°672 ⁴¹³	47°94 ²⁸⁴	19°05 ⁴⁷	63°18 ²⁹⁰
15·3	51°816 ²⁹³	10°32 ¹⁷⁸	32°132 ⁴⁶⁰	45°35 ²⁵⁹	19°57 ⁵²	60°58 ²⁶⁰
25·3	52°133 ³¹⁷	08°37 ¹⁹⁵	32°632 ⁵⁰⁰	43°11 ²²⁴	20°14 ⁵⁷	58°36 ²²²
Dec. 5·3	52°464 ³³¹	06°31 ²⁰⁶	33°158 ⁵²⁶	41°27 ¹⁸⁴	20°74 ⁶⁰	56°57 ¹⁷⁹
15·2	52°803 ³³⁹	04°18 ²¹³	33°699 ⁵⁴¹	39°89 ¹³⁸	21°35 ⁶¹	55°29 ¹²⁸
25·2	53°138 ³³⁵	02°08 ²¹⁰	34°238 ⁵³⁹	39°03 ⁸⁶	21°96 ⁶¹	54°55 ⁷⁴
35·2	53°459 ³²¹	00°05 ²⁰³	34°757 ⁵¹⁹	38°71 ³²	22°55 ⁵⁹	54°39 ¹⁶
Mean Place	50°526	16°15	30°499	67°75	17°952	84°37
Sec <i>δ</i> , Tan <i>δ</i>	1·002	+0°070	1·825	+1°526	2·140	+1°892
L <i>α</i> , L <i>δ</i>	0·00	—0·4	+0·01	—0·4	+0·01	—0·4
<i>ω α</i> , <i>ω δ</i>	0·00	+0·3	+0·10	+0·3	+0·12	+0·3
Authority and Catalogue No.	672		A. E. 674		A. E. 675	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Leonis.		ψ Ursæ Majoris.		β Crateris.	
	4.66	F 0	3.15	K 0	4.52	A 2
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m II 01	[°] ['] 7 43	^h ^m II 05	[°] ['] 44 52	^h ^m II 08	[°] ['] 22 25
Jan. 1.2	17.741 ^s	34.93 ["]	37.044 ^s	74.62 ["]	06.360 ^s	44.01 ["]
11.2	18.049 ³⁰⁸	33.12 ¹⁸¹	37.452 ⁴⁰⁸	74.12 ⁵⁰	06.674 ³¹⁴	46.59 ²⁵⁸
21.1	18.328 ²⁷⁹	31.51 ¹⁶¹	37.826 ³⁷⁴	74.12 ²⁸³	06.957 ²⁸³	49.25 ²⁶⁶
31.1	18.571 ²⁴³	30.15 ¹³⁶	38.154 ³²⁸	74.60 ⁴⁸	07.201 ²⁴⁴	51.90 ²⁶⁵
Feb. 10.1	18.770 ¹⁹⁹	29.08 ¹⁰⁷	38.425 ²⁷¹	75.53 ⁹³	07.401 ²⁰⁰	54.48 ²⁵⁸
20.0	18.923 ¹⁵³	28.29 ⁷⁹	38.635 ²¹⁰	76.85 ¹³²	07.553 ¹⁵²	56.94 ²⁴⁶
Mar. 1.0	19.030 ¹⁰⁷	27.78 ⁵¹	38.781 ¹⁴⁶	78.50 ¹⁶⁵	07.658 ¹⁰⁵	59.21 ²²⁷
11.0	19.091 ⁶¹	27.54 ²⁴	38.863 ⁸²	80.38 ¹⁸⁸	07.718 ⁶⁰	61.27 ²⁰⁶
21.0	19.111 ²⁰	27.53 ¹	38.884 ²¹	82.40 ²⁰²	07.735 ¹⁷	63.08 ¹⁸¹
30.9	19.094 ¹⁷	27.73 ²⁰	38.850 ³⁴	84.47 ²⁰⁷	07.715 ²⁰	64.62 ¹⁵⁴
Apr. 9.9	19.047 ⁴⁷	28.09 ³⁶	38.769 ⁸¹	86.50 ²⁰³	07.664 ⁵¹	65.89 ¹²⁷
19.9	18.976 ⁷¹	28.57 ⁴⁸	38.650 ¹¹⁹	88.40 ¹⁹⁰	07.588 ⁷⁶	66.88 ⁹⁹
29.9	18.887 ⁸⁹	29.14 ⁵⁷	38.501 ¹⁴⁹	90.10 ¹⁷⁰	07.492 ⁹⁶	67.58 ⁷⁰
May 9.8	18.787 ¹⁰⁰	29.77 ⁶³	38.333 ¹⁶⁸	91.54 ¹⁴⁴	07.382 ¹¹⁰	68.00 ⁴²
19.8	18.682 ¹⁰⁵	30.41 ⁶⁴	38.154 ¹⁷⁹	92.67 ¹¹³	07.264 ¹¹⁸	68.14 ¹⁴
29.8	18.575 ¹⁰⁷	3.06 ⁶⁵	37.971 ¹⁸³	93.46 ⁷⁹	07.142 ¹²²	68.01 ¹³
June 8.7	18.472 ¹⁰³	3.69 ⁶³	37.791 ¹⁸⁰	93.88 ⁴²	07.019 ¹²³	67.62 ³⁹
18.7	18.375 ⁹⁷	32.28 ⁵⁹	37.622 ¹⁶⁹	93.93 ⁵	06.900 ¹¹⁹	66.99 ⁶³
28.7	18.287 ⁸⁸	32.82 ⁵⁴	37.469 ¹⁵³	93.61 ³²	06.787 ¹¹³	66.12 ⁸⁷
July 8.7	18.212 ⁷⁵	33.28 ⁴⁶	37.335 ¹³⁴	92.92 ⁶⁹	06.685 ¹⁰²	65.05 ¹⁰⁷
18.6	18.152 ⁶⁰	33.66 ³⁸	37.224 ¹¹¹	91.87 ¹⁰⁵	06.596 ⁸⁹	63.81 ¹²⁴
28.6	18.108 ⁴⁴	33.93 ²⁷	37.140 ⁸⁴	90.49 ¹³⁸	06.524 ⁷²	62.44 ¹³⁷
Aug. 7.6	18.084 ²⁴	34.08 ¹⁵	37.087 ⁵³	88.81 ¹⁶⁸	06.472 ⁵²	60.99 ¹⁴⁵
17.6	18.082 ²	34.09 ¹	37.066 ²¹	86.85 ¹⁹⁶	06.443 ²⁹	59.50 ¹⁴⁹
27.5	18.105 ²³	33.93 ¹⁶	37.082 ¹⁶	84.63 ²²²	06.443 ³²	58.05 ¹⁴⁵
Sept. 6.5	18.156 ⁵¹	33.58 ³⁵	37.136 ⁵⁴	82.20 ²⁴³	06.475 ⁶⁸	56.69 ¹³⁶
16.5	18.238 ⁸²	33.02 ⁵⁶	37.233 ⁹⁷	79.59 ²⁶¹	06.543 ¹⁰⁷	55.50 ¹¹⁹
26.4	18.353 ¹¹⁵	32.24 ⁷⁸	37.375 ¹⁴²	76.85 ²⁷⁴	06.650 ¹⁰⁷	54.53 ⁹⁷
Oct. 6.4	18.504 ¹⁵¹	31.22 ¹⁰²	37.563 ¹⁸⁸	74.01 ²⁸⁴	06.797 ¹⁴⁷	53.86 ⁶⁷
16.4	18.693 ¹⁸⁹	29.96 ¹²⁶	37.799 ²³⁶	71.14 ²⁸⁷	06.986 ¹⁸⁹	53.53 ³³
26.4	18.918 ²²⁵	28.46 ¹⁵⁰	38.082 ²⁸³	68.29 ²⁸⁵	07.216 ²³⁰	53.59 ⁶
Nov. 5.3	19.178 ²⁶⁰	26.76 ¹⁷⁰	38.411 ³²⁹	65.53 ²⁷⁶	07.484 ²⁶⁸	54.07 ⁴⁸
15.3	19.469 ²⁹¹	24.87 ¹⁸⁹	38.780 ³⁶⁹	62.92 ²⁶¹	07.785 ³⁰¹	54.97 ⁹⁰
25.3	19.785 ³¹⁶	22.85 ²⁰²	39.182 ⁴⁰²	60.54 ²³⁸	08.113 ³²⁸	56.28 ¹³¹
Dec. 5.3	20.118 ³³³	20.75 ²¹⁰	39.609 ⁴²⁷	58.46 ²⁰⁸	08.457 ³⁴⁴	57.98 ¹⁷⁰
15.2	20.458 ³⁴⁰	18.63 ²¹²	40.049 ⁴⁴⁰	56.75 ¹⁷¹	08.809 ³⁵²	60.02 ²⁰⁴
25.2	20.796 ³³⁸	16.57 ²⁰⁶	40.489 ⁴⁴⁰	55.46 ¹²⁹	09.156 ³⁴⁷	62.33 ²³¹
35.2	21.121 ³²⁵	14.63 ¹⁹⁴	40.916 ⁴²⁷	54.65 ⁸¹	09.488 ³³²	64.85 ²⁵²
Mean Place	18.198	32.10	37.319	82.21	06.817	56.70
Sec δ , Tan δ	1.009	+0.136	1.411	+0.996	1.082	-0.413
L a , L δ	0.00	-0.4	+0.01	-0.4	0.00	-0.4
ω a , ω δ	+0.01	+0.3	+0.06	+0.2	-0.03	+0.2
Authority and Catalogue No.	A. E.	677	A. E.	680	A. E.	682

APPARENT PLACES OF STARS, 1928.

345

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Leonis.		θ Leonis.		δ Crateris.	
	2.58	A 3	3.41	A 0	3.82	K 0
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 11 10	^o 54	^h ^m 11 10	^o 49	^h ^m 11 15	^o 23
Jan. 1.2	16.394 ^s	65.11 ["]	27.290 ^s	24.42 ["]	43.791 ^s	08.94 ["]
11.2	16.725 ³³¹	63.69 ¹⁴²	27.612 ³²²	22.83 ¹⁵⁹	44.102 ³¹¹	11.35 ²⁴¹
21.1	17.028 ³⁰³	62.60 ¹⁰⁹	27.906 ²⁹⁴	21.53 ¹³⁰	44.386 ²⁸⁴	13.76 ²⁴¹
31.1	17.293 ²⁶⁵	61.86 ⁷⁴	28.164 ²⁵⁸	20.54 ⁹⁹	44.633 ²⁴⁷	16.10 ²³⁴
Feb. 10.1	17.515 ²²²	61.48 ³⁸	28.380 ²¹⁶	19.88 ⁶⁶	44.837 ²⁰⁴	18.32 ²²²
20.1	17.689 ¹⁷⁴	61.45 ³	28.548 ¹⁶⁸	19.54 ³⁴	44.997 ¹⁶⁰	20.36 ²⁰⁴
Mar. 1.0	17.813 ¹²⁴	61.73 ²⁸	28.669 ¹²¹	19.51 ³	45.112 ¹¹⁵	22.20 ¹⁸⁴
11.0	17.889 ⁷⁶	62.29 ⁵⁶	28.743 ⁷⁴	19.76 ²⁵	45.182 ⁷⁰	23.80 ¹⁶⁰
21.0	17.920 ³¹	63.06 ⁷⁷	28.773 ³⁰	20.24 ⁴⁸	45.211 ²⁹	25.15 ¹³⁵
30.9	17.911 ⁹	64.00 ⁹⁴	28.765 ⁸	20.90 ⁶⁶	45.204 ⁷	26.24 ¹⁰⁹
Apr. 9.9	17.868 ⁴³	65.03 ¹⁰³	28.724 ⁴¹	21.68 ⁷⁸	45.166 ³⁸	27.09 ⁸⁵
19.9	17.797 ⁷¹	66.11 ¹⁰⁸	28.657 ⁶⁷	22.55 ⁸⁷	45.103 ⁶³	27.69 ⁶⁰
29.9	17.706 ⁹¹	67.18 ¹⁰⁷	28.571 ⁸⁶	23.44 ⁸⁹	45.021 ⁸²	28.05 ³⁶
May 9.8	17.601 ¹⁰⁵	68.20 ¹⁰²	28.471 ¹⁰⁰	24.31 ⁸⁷	44.925 ⁹⁶	28.19 ¹⁴
19.8	17.489 ¹¹²	69.11 ⁹¹	28.364 ¹⁰⁷	25.14 ⁸³	44.820 ¹⁰⁵	28.11 ⁸
29.8	17.374 ¹¹⁵	69.90 ⁷⁹	28.254 ¹¹⁰	25.89 ⁷⁵	44.711 ¹⁰⁹	27.83 ²⁸
June 8.8	17.261 ¹¹³	70.54 ⁶⁴	28.147 ¹⁰⁷	26.54 ⁶⁵	44.602 ¹⁰⁹	27.37 ⁴⁶
18.7	17.154 ¹⁰⁷	71.01 ⁴⁷	28.045 ¹⁰²	27.07 ⁵³	44.495 ¹⁰⁷	26.73 ⁶⁴
28.7	17.057 ⁹⁷	71.30 ²⁹	27.952 ⁹³	27.46 ³⁹	44.393 ¹⁰²	25.93 ⁸⁰
July 8.7	16.971 ⁸⁶	71.39 ⁹	27.871 ⁸¹	27.70 ²⁴	44.300 ⁹³	25.01 ⁹²
18.6	16.901 ⁷⁰	71.29 ¹⁰	27.804 ⁶⁷	27.79 ⁹	44.219 ⁸¹	23.98 ¹⁰³
28.6	16.849 ⁵²	70.99 ³⁰	27.753 ⁵¹	27.71 ⁸	44.153 ⁶⁶	22.89 ¹⁰⁹
Aug. 7.6	16.817 ³²	70.48 ⁵¹	27.722 ³¹	27.46 ²⁵	44.105 ⁴⁸	21.77 ¹¹²
17.6	16.808 ⁹	69.76 ⁷²	27.712 ¹⁰	27.02 ⁴⁴	44.079 ²⁶	20.66 ¹¹¹
27.5	16.825 ¹⁷	68.83 ⁹³	27.728 ¹⁶	26.39 ⁶³	44.079 ⁸⁴	19.61 ¹⁰⁵
Sept. 6.5	16.871 ⁴⁶	67.69 ¹¹⁴	27.772 ⁴⁴	25.55 ⁸⁴	44.107 ²⁸	18.69 ⁹²
16.5	16.949 ⁷⁸	66.34 ¹³⁵	27.848 ⁷⁶	24.49 ¹⁰⁶	44.169 ⁶²	17.94 ⁷⁵
26.5	17.062 ¹¹³	64.78 ¹⁵⁶	27.958 ¹¹⁰	23.22 ¹²⁷	44.267 ⁹⁸	17.42 ⁵²
Oct. 6.4	17.213 ¹⁵¹	63.02 ¹⁷⁶	28.104 ¹⁴⁶	21.74 ¹⁴⁸	44.404 ¹³⁷	17.18 ²⁴
16.4	17.402 ¹⁸⁹	61.09 ¹⁹³	28.289 ¹⁸⁵	20.06 ¹⁶⁸	44.581 ¹⁷⁷	17.25 ⁷
26.4	17.630 ²²⁸	59.01 ²⁰⁸	28.512 ²²³	18.19 ¹⁸⁷	44.798 ²¹⁷	17.68 ⁴³
Nov. 5.3	17.895 ²⁶⁵	56.82 ²¹⁹	28.772 ²⁶⁰	16.17 ²⁰²	45.053 ²⁵⁵	18.47 ⁷⁹
15.3	18.194 ²⁹⁹	54.57 ²²⁵	29.064 ²⁹²	14.04 ²¹³	45.341 ²³⁸	19.63 ¹¹⁶
25.3	18.521 ³²⁷	52.31 ²²⁶	29.384 ³²⁰	11.86 ²¹⁸	45.655 ³¹⁴	21.13 ¹⁵⁰
Dec. 5.3	18.868 ³⁴⁷	50.11 ²²⁰	29.723 ³³⁹	09.68 ²¹⁸	45.989 ³³⁴	22.94 ¹⁸¹
15.2	19.225 ³⁵⁷	48.04 ²⁰⁷	30.072 ³⁴⁹	07.57 ²¹¹	46.331 ³⁴²	25.01 ²⁰⁷
25.2	19.583 ³⁵⁸	46.17 ¹⁸⁷	30.421 ³⁴⁹	05.61 ¹⁹⁶	46.671 ³⁴⁰	27.28 ²²⁷
35.2	19.929 ³⁴⁶	44.55 ¹⁶²	30.758 ³³⁷	03.85 ¹⁷⁶	46.999 ³²⁸	29.66 ²³⁸
Mean Place	16.868	66.47	27.780	24.22	44.320	19.10
Sec δ , Tan δ	1.071	+0.382	1.039	+0.283	1.032	-0.257
L α , L δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω α , ω δ	+0.02	+0.2	+0.02	+0.2	-0.02	+0.2
Authority and Catalogue No.	A. E.	683	A. E.	684	A. E.	690

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	τ Leonis.		λ Draconis.		ξ Hydræ.	
	5.18	Ko	4.06	Ma	3.72	G 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 11 ^m 24	[°] 3 14	^h 11 ^m 27	[°] 69 43	^h 11 ^m 29	[°] 31 27
Jan. 1.2	13.460	74.94	09.26	31.18	26.770	16.62
11.2	13.776 ³¹⁶	72.94 ²⁰⁰	10.02 ⁷⁶	31.28 ¹⁰	27.110 ³⁴⁰	19.21 ²⁵⁹
21.1	14.066 ²⁹⁰	71.10 ¹⁸⁴	10.72 ⁷⁰	31.99 ⁷¹	27.420 ³¹⁰	21.97 ²⁷⁶
31.1	14.322 ²⁵⁶	69.48 ¹⁶²	11.34 ⁶²	33.28 ¹²⁹	27.692 ²⁷²	24.83 ²⁸⁶
Feb. 10.1	14.539 ²¹⁷	68.10 ¹³⁸	11.86 ⁵²	35.09 ¹⁸¹	27.920 ²²⁸	27.71 ²⁸⁸
20.1	14.712 ¹⁷³	67.00 ¹¹⁰	12.28 ⁴²	37.33 ²²⁴	28.099 ¹⁷⁹	30.54 ²⁸³
Mar. 1.0	14.840 ¹²⁸	66.19 ⁸¹	12.58 ³⁰	39.90 ²⁵⁷	28.230 ¹³¹	33.24 ²⁷⁰
11.0	14.924 ⁸⁴	65.65 ⁵⁴	12.75 ¹⁷	42.70 ²⁸⁰	28.312 ⁸²	35.78 ²⁵⁴
21.0	14.967 ⁴³	65.35 ³⁰	12.79 ⁴	45.59 ²⁸⁹	28.350 ³⁸	38.11 ²³³
31.0	14.972 ⁵	65.29 ⁶	12.72 ⁷	48.47 ²⁸⁸	28.348 ²	40.18 ²⁰⁷
Apr. 9.9	14.947 ²⁵	65.41 ¹²	12.54 ¹⁸	51.21 ²⁷⁴	28.311 ³⁷	41.99 ¹⁸¹
19.9	14.896 ⁵¹	65.70 ²⁹	12.27 ²⁷	53.71 ²⁵⁰	28.244 ⁶⁷	43.50 ¹⁵¹
29.9	14.825 ⁷¹	66.10 ⁴⁰	11.92 ³⁵	55.88 ²¹⁷	28.153 ⁹¹	44.70 ¹²⁰
May 9.8	14.741 ⁸⁴	66.60 ⁵⁰	11.52 ⁴⁰	57.65 ¹⁷⁷	28.043 ¹¹⁰	45.58 ⁸⁸
19.8	14.647 ⁹⁴	67.17 ⁵⁷	11.07 ⁴⁵	58.95 ¹³⁰	27.920 ¹²³	46.14 ⁵⁶
29.8	14.548 ⁹⁹	67.78 ⁶¹	10.60 ⁴⁷	59.75 ⁸⁰	27.787 ¹³³	46.37 ²³
June 8.8	14.448 ¹⁰⁰	68.40 ⁶²	10.13 ⁴⁷	60.03 ²⁸	27.649 ¹³⁸	46.27 ¹⁰
18.7	14.351 ⁹⁷	69.03 ⁶³	09.66 ⁴⁷	59.79 ²⁴	27.510 ¹³⁹	45.86 ⁴¹
28.7	14.259 ⁹²	69.55 ⁶²	09.22 ⁴⁴	59.03 ⁷⁶	27.374 ¹³⁶	45.14 ⁷²
July 8.7	14.175 ⁸⁴	70.22 ⁵⁷	08.81 ⁴¹	57.76 ¹²⁷	27.244 ¹³⁰	44.14 ¹⁰⁰
18.7	14.102 ⁷³	70.74 ⁵²	08.45 ³⁶	56.03 ¹⁷³	27.125 ¹¹⁹	42.89 ¹²⁵
28.6	14.043 ⁵⁹	71.18 ⁴⁴	08.14 ³¹	53.86 ²¹⁷	27.020 ¹⁰⁵	41.43 ¹⁴⁰
Aug. 7.6	14.080 ⁴³	71.53 ³⁵	07.89 ²⁵	51.31 ²⁵⁵	26.934 ⁸⁶	39.80 ¹⁶³
17.6	13.977 ²³	71.75 ²²	07.72 ¹⁷	48.43 ²⁸⁸	26.873 ⁶¹	38.07 ¹⁷³
27.5	13.977 ²⁸	71.82 ⁷	07.63 ⁹	45.27 ³¹⁶	26.841 ³²	36.29 ¹⁷⁸
Sept. 6.5	14.005 ⁵⁸	71.72 ¹⁰	07.61 ²	41.89 ³³⁸	26.844 ³	34.54 ¹⁷⁵
16.5	14.063 ⁵⁸	71.41 ³¹	07.68 ⁷	38.36 ³⁵³	26.885 ⁴¹	32.90 ¹⁶⁴
26.5	14.156 ⁹³	70.87 ⁵⁴	07.85 ¹⁷	34.74 ³⁶²	26.970 ⁸⁵	31.45 ¹⁴⁵
Oct. 6.4	14.284 ¹²⁸	70.08 ⁷⁹	08.11 ²⁶	31.11 ³⁶³	27.100 ¹³⁰	30.26 ¹¹⁹
16.4	14.451 ¹⁶⁷	69.03 ¹⁰⁵	08.46 ³⁵	27.55 ³⁵⁶	27.277 ¹⁷⁷	29.40 ⁸⁶
26.4	14.658 ²⁰⁷	67.72 ¹³¹	08.91 ⁴⁵	24.12 ³⁴³	27.501 ²²⁴	28.93 ⁴⁷
Nov. 5.4	14.901 ²⁴³	66.17 ¹⁵⁵	09.44 ⁵³	20.93 ³¹⁹	27.767 ²⁶⁶	28.90 ³
15.3	15.179 ²⁷⁸	64.38 ¹⁷⁹	10.05 ⁶¹	18.04 ²⁸⁹	28.074 ³⁰⁷	29.33 ⁴³
25.3	15.485 ³⁰⁶	62.42 ¹⁹⁶	10.74 ⁶⁹	15.54 ²⁵⁰	28.412 ³³⁸	30.24 ⁹¹
Dec. 5.3	15.811 ³²⁶	60.33 ²⁰⁹	11.47 ⁷³	13.51 ²⁰³	28.771 ³⁵⁹	31.61 ¹³⁷
15.2	16.149 ³³⁸	58.17 ²¹⁶	12.24 ⁷⁷	12.01 ¹⁵⁰	29.142 ³⁷¹	33.39 ¹⁷⁸
25.2	16.488 ³³⁹	56.00 ²¹⁷	13.03 ⁷⁹	11.09 ⁹²	29.512 ³⁷⁰	35.54 ²¹⁵
35.2	16.817 ³²⁹	53.91 ²⁰⁹	13.80 ⁷⁷	10.79 ³⁰	29.869 ³⁵⁷	38.00 ²⁴⁶
Mean Place	14.045	70.72	09.017	43.30	27.348	32.36
Sec δ , Tan δ	1.002	+0.057	2.886	+2.708	1.172	-0.612
L α , L δ	0.00	-0.4	+0.01	-0.4	0.00	-0.4
ω α , ω δ	0.00	+0.2	+0.18	+0.1	-0.04	+0.1
Authority and Catalogue No.	697		A. E. 701		A. E. 702	

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	λ Centauri.		ν Leonis.		ν Virginis.	
	3·34	B 9	4·47	K 0	4·20	M a
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 11 32	^m 62 36	^h 11 33	^m 0 25	^h 11 42	^m 6 55
Jan. 1·2	26·80 ⁵²	53·01 ²⁵⁰	15·037 ³¹⁸	28·38 ²¹¹	08·808 ³²⁵	61·40 ¹⁹⁶
11·2	27·32 ⁴⁷	55·51 ²⁹²	15·355 ²⁹³	30·49 ¹⁹⁸	09·133 ³⁰²	59·44 ¹⁷⁷
21·1	27·79 ⁴¹	58·43 ³²⁶	15·648 ²⁶¹	32·47 ¹⁷⁹	09·435 ²⁷⁰	57·67 ¹⁵¹
31·1	28·20	61·69	15·909	34·26	09·705	56·16
Feb. 10·1	28·54 ³⁴	65·19 ³⁵⁰	16·132 ²²³	35·83 ¹⁵⁷	09·938 ²³³	54·94 ¹²²
20·1	28·80 ²⁶	68·83 ³⁶⁴	16·311 ¹⁷⁹	37·14 ¹³¹	10·129 ¹⁹¹	54·01 ⁹³
Mar. 1·0	28·97 ¹⁷	72·55 ³⁷²	16·447 ¹³⁶	38·19 ¹⁰⁵	10·276 ¹⁴⁷	53·38 ⁶³
11·0	29·07 ¹⁰	76·23 ³⁶⁸	16·539 ⁹²	38·97 ⁷⁸	10·379 ¹⁰³	53·04 ³⁴
21·0	29·08 ¹	79·81 ³⁵⁸	16·590 ⁵¹	39·49 ⁵²	10·441 ⁶²	52·96 ⁸
31·0	29·03 ⁵	83·20 ³³⁹	16·605 ¹⁵	39·78 ²⁹	10·465 ²⁴	53·10 ¹⁴
Apr. 9·9	28·91 ¹²	86·35 ³¹⁵	16·588 ¹⁷	39·86 ⁸	10·457 ⁸	53·43 ³³
19·9	28·73 ¹⁸	89·19 ²⁸⁴	16·545 ⁴³	39·77 ⁹	10·420 ³⁷	53·91 ⁴⁸
29·9	28·51 ²²	91·67 ²⁴⁸	16·481 ⁶⁴	39·52 ²⁵	10·362 ⁵⁸	54·49 ⁵⁸
May 9·8	28·24 ²⁷	93·74 ²⁰⁷	16·402 ⁷⁹	39·15 ³⁷	10·287 ⁷⁵	55·15 ⁶⁶
19·8	27·93 ³¹	95·38 ¹⁶⁴	16·312 ⁹⁰	38·68 ⁴⁷	10·201 ⁸⁶	55·83 ⁶⁸
29·8	27·60 ³³	96·54 ¹¹⁶	16·216 ⁹⁶	38·14 ⁵⁴	10·107 ⁹⁴	56·52 ⁶⁹
June 8·8	27·25 ³⁵	97·21 ⁶⁷	16·118 ⁹⁸	37·54 ⁶⁰	10·009 ⁹⁸	57·20 ⁶⁸
18·7	26·90 ³⁵	97·37 ¹⁶	16·021 ⁹⁷	36·91 ⁶³	09·911 ⁹⁸	57·83 ⁶³
28·7	26·54 ³⁶	97·03 ³⁴	15·927 ⁹⁴	36·7 ⁶⁴	09·816 ⁹⁵	58·41 ⁵⁸
July 8·7	26·19 ³⁵	96·19 ⁸⁴	15·840 ⁸⁷	35·63 ⁶⁴	09·726 ⁹⁰	58·91 ⁵⁰
18·7	25·87 ³²	94·89 ¹³⁰	15·762 ⁷⁸	35·02 ⁶¹	09·644 ⁸²	59·31 ⁴⁰
28·6	25·57 ³⁰	93·16 ¹⁷³	15·696 ⁶⁶	34·45 ⁵⁷	09·575 ⁶⁹	59·61 ³⁰
Aug. 7·6	25·31 ²⁶	91·05 ²¹¹	15·646 ⁵⁰	33·95 ⁵⁰	09·519 ⁵⁶	59·78 ¹⁷
17·6	25·10 ²¹	88·65 ²⁴⁰	15·614 ³²	33·55 ⁴⁰	09·481 ³⁸	59·80 ²
27·5	24·96 ¹⁴	86·01 ²⁶⁴	15·605 ⁹	33·29 ²⁶	09·466 ¹⁵	59·65 ¹⁵
Sept. 6·5	24·89 ⁷	83·25 ²⁷⁶	15·623 ¹⁸	33·19 ¹⁰	09·476 ¹⁰	59·30 ³⁵
16·5	24·90 ¹	80·46 ²⁷⁹	15·671 ⁴⁸	33·28 ⁹	09·517 ⁴¹	58·75 ⁵⁵
26·5	24·99 ⁹	77·74 ²⁷²	15·753 ⁸²	33·60 ³²	09·591 ⁷⁴	57·98 ⁷⁷
Oct. 6·4	25·17 ¹⁸	75·23 ²⁵¹	15·873 ¹²⁰	34·18 ⁵⁸	09·703 ¹¹²	56·96 ¹⁰²
16·4	25·43 ²⁶	73·02 ²²¹	16·032 ¹⁵⁹	35·02 ⁸⁴	09·854 ¹⁵¹	55·69 ¹²⁷
26·4	25·78 ³⁵	71·21 ¹⁸¹	16·230 ¹⁹⁸	36·14 ¹¹²	10·046 ¹⁹²	54·18 ¹⁵¹
Nov. 5·4	26·21 ⁴³	69·88 ¹³³	16·465 ²³⁵	37·54 ¹⁴⁰	10·277 ²³¹	52·45 ¹⁷³
15·3	26·70 ⁴⁹	69·11 ⁷⁷	16·737 ²⁷²	39·19 ¹⁶⁵	10·543 ²⁶⁶	50·52 ¹⁹³
25·3	27·23 ⁵³	68·95 ¹⁶	17·039 ³⁰²	41·05 ¹⁸⁶	10·841 ²⁹⁸	48·44 ²⁰⁸
Dec. 5·3	27·80 ⁵⁷	69·41 ⁴⁶	17·362 ³²³	43·09 ²⁰⁴	11·163 ³²²	46·26 ²¹⁸
15·2	28·39 ⁵⁹	70·49 ¹⁰⁸	17·698 ³³⁶	45·24 ²¹⁵	11·500 ³³⁷	44·05 ²²¹
25·2	28·97 ⁵⁸	72·15 ¹⁶⁶	18·037 ³³⁹	47·44 ²²⁰	11·842 ³⁴²	41·87 ²¹⁸
35·2	29·52 ⁵⁵	74·37 ²²²	18·368 ³³¹	49·62 ²¹⁸	12·177 ³³⁵	39·79 ²⁰⁸
Mean Place	27·097	76·51	15·676	33·82	09·487	58·53
Sec δ, Tan δ	2·174	-1·931	1·000	-0·007	1·007	+0·122
L α, L δ	-0·01	-0·4	0·00	-0·4	0·00	-0·4
ω α, ω δ	-0·13	+0·1	0·00	+0·1	+0·01	+0·1
Authority and Catalogue No.	A. E.	704	A. E.	706		712

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Leonis.		β Virginis.		β Centauri.	
	2.23	A 2	3.80	F 8	4.71	K 0
	1	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 11 45	^h ^m 14 58	^h ^m 11 46	^h ^m 2 09	^h ^m 11 47	^h ^m 44 46
Jan. 1.2	22.58 ⁸	28.64	55.92 ¹	78.62	31.60 ⁴	02.27 ⁴
11.2	22.52 ¹ 333	26.85 ¹⁷⁹	56.24 ⁵ 324	76.55 ²⁰⁷	31.99 ⁸ 394	04.75 ²⁴⁸
21.2	23.23 ² 311	25.56 ¹⁴⁹	56.54 ⁸ 303	74.62 ¹⁹³	32.36 ⁰ 362	07.53 ²⁷⁸
31.2	23.51 ² 280	24.18 ¹¹⁸	56.82 ¹ 273	72.90 ¹⁷²	32.68 ¹ 321	10.54 ³⁰¹
Feb. 10.1	23.75 ⁴ 242	23.34 ⁸⁴	57.05 ⁷ 236	71.43 ¹⁴⁷	32.95 ⁴ 273	13.70 ³¹⁶
20.1	23.95 ³ 190	22.85 ⁴⁹	57.25 ¹ 194	70.22 ¹²¹	33.17 ⁴ 220	16.92 ³²²
Mar. 1.0	24.10 ⁷ 154	22.69 ¹⁶	57.40 ² 151	69.30 ⁹²	33.33 ⁹ 165	20.12 ³²⁰
11.0	24.21 ⁶ 109	22.84 ¹⁵	57.51 ⁰ 108	68.66 ⁶⁴	33.45 ¹ 112	23.23 ³¹¹
21.0	24.28 ¹ 65	23.25 ⁴¹	57.57 ⁶ 67	68.28 ³⁸	33.51 ⁰ 59	26.20 ²⁹⁷
31.0	24.30 ⁷ 26	23.87 ⁶²	57.60 ⁷ 30	68.14 ¹⁴	33.52 ² 12	28.96 ²⁷⁶
Apr. 9.9	24.29 ⁸ 9	24.65 ⁷⁸	57.60 ⁵ 2	68.20 ²	33.49 ¹ 31	31.47 ²⁵¹
19.9	24.26 ¹ 37	25.55 ⁹⁰	57.57 ⁵ 30	68.43 ²³	33.42 ⁶ 69	33.69 ²²²
29.9	24.20 ⁰ 61	26.50 ⁹⁵	57.52 ² 52	68.79 ³⁶	33.32 ⁰ 102	35.59 ¹⁹⁰
May 9.9	24.12 ¹ 79	27.45 ⁹⁵	57.45 ⁶ 69	69.26 ⁴⁷	33.19 ² 128	37.14 ¹⁵⁵
19.8	24.02 ⁹ 92	28.37 ⁹²	57.37 ² 82	69.81 ⁵⁵	33.04 ² 150	38.31 ¹¹⁷
29.8	23.93 ⁰ 09	29.13 ⁸⁶	57.28 ³ 89	70.40 ⁵⁹	32.87 ⁵ 167	39.09 ⁷⁸
June 8.8	23.82 ⁷ 123	29.99 ⁷⁶	57.18 ⁹ 94	71.02 ⁶²	32.69 ⁶ 179	39.46 ³⁷
18.7	23.72 ³ 154	30.63 ⁶³	57.09 ⁶ 96	71.64 ⁶²	32.50 ⁹ 187	39.42 ⁴
28.7	23.62 ² 101	31.11 ⁵⁰	57.00 ³ 93	72.25 ⁶¹	32.32 ⁰ 189	38.98 ⁴⁴
July 8.7	23.52 ⁷ 05	31.47 ³⁵	56.91 ⁸ 89	72.83 ⁵⁸	32.13 ⁵ 185	38.15 ⁸³
18.7	23.44 ¹ 86	31.65 ¹⁸	56.82 ² 82	73.36 ⁵³	31.95 ⁹ 176	36.96 ¹¹⁹
28.6	23.39 ⁵ 76	31.65 ¹⁸	56.75 ⁷ 72	73.81 ⁴⁵	31.79 ⁶ 163	35.45 ¹⁵¹
Aug. 7.6	23.30 ⁵ 10	31.47 ¹⁸	56.69 ⁵ 58	74.17 ³⁶	31.65 ⁵ 141	33.67 ¹⁷⁸
17.6	23.26 ⁴ 41	31.09 ³⁸	56.65 ⁴ 40	74.43 ²⁶	31.54 ¹ 114	31.66 ²⁰¹
27.6	23.24 ⁵ 10	30.50 ⁵⁹	56.64 ⁰ 10	74.53 ¹⁰	31.46 ³ 78	29.51 ²¹⁵
Sept. 6.5	23.25 ² 7	29.70 ⁸⁰	56.64 ⁷ 7	74.46 ⁷	31.42 ⁶ 37	27.29 ²²²
16.5	23.20 ² 38	28.67 ¹⁰³	56.68 ³ 36	74.20 ²⁶	31.43 ⁶ 10	25.09 ²²⁰
26.5	23.16 ¹ 71	27.41 ¹²⁶	56.75 ⁷ 70	73.70 ⁵⁰	31.49 ⁹ 63	23.01 ²⁰⁸
Oct. 6.4	23.47 ⁰ 109	25.92 ¹⁴⁹	56.86 ¹ 108	72.95 ⁷⁵	31.61 ⁹ 120	21.14 ¹⁸⁷
16.4	23.61 ⁹ 149	24.22 ¹⁷⁰	57.00 ¹ 147	71.95 ¹⁰⁰	31.79 ⁷ 178	19.57 ¹⁵⁷
26.4	23.80 ⁹ 190	22.51 ¹⁹¹	57.19 ⁸ 188	70.69 ¹²⁶	32.03 ² 235	18.38 ¹¹⁹
Nov. 5.4	24.03 ⁹ 230	20.23 ²⁰⁸	57.42 ² 227	69.17 ¹⁵²	32.32 ² 290	17.63 ⁷⁵
15.3	24.30 ⁷ 268	18.02 ²²¹	57.68 ⁶ 264	67.41 ¹⁷⁶	32.66 ¹ 339	17.38 ²⁵
25.3	24.60 ⁷ 300	15.73 ²²⁹	57.98 ⁹ 296	65.46 ¹⁹⁵	33.03 ⁸ 377	17.67 ²⁹
Dec. 5.3	24.93 ³ 326	13.43 ²³⁰	58.30 ² 321	63.36 ²¹⁰	33.44 ⁴ 406	18.50 ⁸³
15.3	25.27 ⁵ 347	11.17 ²²⁶	58.64 ⁰ 336	61.17 ²¹⁹	33.86 ⁵ 421	19.85 ¹³⁵
25.2	25.62 ³ 348	09.03 ²¹⁴	58.98 ¹ 341	58.96 ²²¹	34.28 ⁴ 423	21.68 ¹⁸³
35.2	25.96 ⁷ 344	07.09 ¹⁹⁴	59.31 ⁶ 335	56.80 ²¹⁶	34.69 ⁹ 411	23.94 ²²⁶
Mean Place	23.267	28.50	56.636	74.14	32.288	21.97
Sec. δ , Tan δ	1 035	+0.268	1.001	+0.038	1.409	-0.992
L. α , L. δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω α , ω δ	-0.02	+0.1	0.00	+0.1	-0.07	+0.1
Authority and Catalogue No.	A. E.	717	A. E.	718	A. N.	719

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Ursæ Majoris. 2.54 A 0		π Virginis. 4.57 A 3		ο Virginis. 4.24 G 5	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
Mean Solar Date.	h m 11 50	° ' s 54 05	h m 11 57	° ' s 7 00	h m 12 01	° ' s 9 07
Jan. 1.2	02.636 ⁵	32.33 ⁶⁸	10.212 ⁵	59.82 ²⁰⁰	31.687 ⁵	60.59 ¹⁹⁷
11.2	03.128 ⁴⁹²	31.65 ¹¹	10.541 ³²⁹	57.82 ¹⁷⁹	32.018 ³³¹	58.62 ¹⁷⁵
21.2	03.594 ⁴⁶⁶	31.54 ⁴⁶	10.850 ³⁰⁹	56.03 ¹⁵⁵	32.330 ³¹²	56.87 ¹⁴⁷
31.1	04.017 ⁴²³	32.00	11.130 ²⁸⁰	54.48	32.614 ²⁸⁴	55.40
Feb. 10.1	04.385 ³⁶⁸	32.99 ⁹⁹	11.375 ²⁴⁵	53.23 ¹²⁵	32.863 ²⁴⁹	54.23 ¹¹⁷
20.1	04.690 ³⁰⁵	34.47 ¹⁴⁸	11.578 ²⁰³	52.27 ⁹⁶	33.072 ²⁰⁹	53.38 ⁸⁵
Mar. 1.1	04.923 ²³³	36.35 ¹⁸⁸	11.739 ¹⁶¹	51.63 ⁶⁴	33.238 ¹⁶⁶	52.85 ⁵³
11.0	05.082 ¹⁵⁹	38.55 ²²⁰	11.857 ¹¹⁸	51.28 ³⁵	33.361 ¹²³	52.62 ^{23.}
21.0	05.169 ⁸⁷	40.95 ²⁴⁰	11.935 ⁷⁸	51.20 ⁸	33.443 ⁸²	52.67 ⁵
31.0	05.186 ¹⁷	43.46 ²⁵¹	11.974 ³⁹	51.35 ¹⁵	33.486 ⁴³	52.96 ²⁹
Apr. 9.9	05.140 ⁴⁶	45.96 ²⁵⁰	11.980 ⁶	51.70 ³⁵	33.495 ⁹	53.43 ⁴⁷
19.9	05.039 ¹⁰¹	48.36 ²⁴⁰	11.957 ²³	52.20 ⁵⁰	33.475 ²⁰	54.05 ⁶²
29.9	04.892 ¹⁴⁷	50.56 ²²⁰	11.910 ⁴⁷	52.81 ⁶¹	33.430 ⁴⁵	54.78 ⁷³
May 9.9	04.708 ¹⁸⁴	52.48 ¹⁹²	11.846 ⁶⁴	53.49 ⁶⁸	33.367 ⁶³	55.56 ⁷⁸
19.8	04.498 ²¹⁰	54.06 ¹⁵⁸	11.767 ⁷⁹	54.22 ⁷³	33.290 ⁷⁷	56.37 ⁸¹
29.8	04.271 ²²⁷	55.25 ¹¹⁹	11.679 ⁸⁸	54.94 ⁷²	33.202 ⁸⁸	57.15 ⁷⁸
June 8.8	04.035 ²³⁶	56.01 ⁷⁶	11.585 ⁹⁴	55.64 ⁷⁰	33.107 ⁹⁵	57.89 ⁷⁴
18.8	03.799 ²³⁶	56.34 ³³	11.488 ⁹⁷	56.30 ⁶⁶	33.009 ⁹⁸	58.57 ⁶⁸
28.7	03.569 ²³⁰	56.21 ¹³	11.391 ⁹⁷	56.89 ⁵⁹	32.911 ⁹⁸	59.16 ⁵⁹
July 8.7	03.352 ²¹⁷	55.62 ⁵⁹	11.298 ⁹³	57.41 ⁵²	32.815 ⁹⁶	59.65 ⁴⁹
18.7	03.154 ¹⁹⁸	54.59 ¹⁰³	11.210 ⁸⁸	57.82 ⁴¹	32.725 ⁹⁰	60.02 ^{37.}
28.6	02.981 ¹⁷³	53.15 ¹⁴⁴	11.131 ⁷⁹	58.13 ³¹	32.644 ⁸¹	60.25 ²³
Aug. 7.6	02.837 ¹⁴⁴	51.32 ¹⁸³	11.065 ⁶⁶	58.29 ¹⁶	32.575 ⁶⁹	60.33 ⁸
17.6	02.727 ¹¹⁰	49.13 ²¹⁹	11.016 ⁴⁹	58.31 ²	32.521 ⁵⁴	60.25 ⁸
27.6	02.657 ⁷⁰	46.62 ²⁵¹	10.987 ²⁹	58.15 ¹⁶	32.488 ³³	59.99 ²⁶
Sept. 6.5	02.633 ²⁴	43.83 ²⁷⁹	10.983 ⁴	57.80 ³⁵	32.480 ⁸	59.52 ⁴⁷
16.5	02.657 ²⁴	40.82 ³⁰¹	11.009 ²⁶	57.24 ⁵⁶	32.501 ²¹	58.83 ⁶⁹
26.5	02.735 ⁷⁸	37.62 ³²⁰	11.068 ⁵⁹	56.46 ⁷⁸	32.555 ⁵⁴	57.92 ⁹¹
Oct. 6.5	02.870 ¹³⁵	34.31 ³³¹	11.164 ⁹⁶	55.43 ¹⁰³	32.646 ⁹¹	56.77 ¹¹⁵
16.4	03.065 ¹⁹⁵	30.94 ³³⁷	11.300 ¹³⁶	54.15 ¹²⁸	32.778 ¹³²	55.38 ¹³⁹
26.4	03.320 ²⁵⁵	27.59 ³³⁵	11.478 ¹⁷⁸	52.64 ¹⁵¹	32.951 ¹⁷³	53.75 ¹⁶³
Nov. 5.4	03.636 ³¹⁶	24.33 ³²⁶	11.696 ²¹⁸	50.89 ¹⁷⁵	33.165 ²¹⁴	51.91 ¹⁸⁴
15.3	04.007 ³⁷¹	21.24 ³⁰⁹	11.953 ²⁵⁷	48.95 ¹⁹⁴	33.419 ²⁵⁴	49.88 ²⁰³
25.3	04.427 ⁴²⁰	18.41 ²⁸³	12.243 ²⁹⁰	46.85 ²¹⁰	33.707 ²⁸⁸	47.72 ²¹⁶
Dec. 5.3	04.890 ⁴⁶³	15.92 ²⁴⁹	12.559 ³¹⁶	44.66 ²¹⁹	34.022 ³¹⁵	45.47 ²²⁵
15.3	05.381 ⁴⁹¹	13.85 ²⁰⁷	12.893 ³³⁴	42.42 ²²⁴	34.356 ³³⁴	43.20 ²²⁷
25.2	05.886 ⁵⁰⁵	12.26 ¹⁵⁹	13.235 ³⁴²	40.21 ²²¹	34.698 ³⁴²	40.99 ²²¹
35.2	06.389 ⁵⁰³	11.20 ¹⁰⁶	13.573 ³³⁸	38.11 ²¹⁰	35.038 ³⁴⁰	38.90 ²⁰⁹
Mean Place	03.070	42.77	10.975	57.09	32.470	58.62
Sec δ, Tan δ	1.705	+1.381	1.008	+0.123	1.013	+0.161
L α, L δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω α, ω δ	+0.09	0.0	+0.01	0.0	+0.01	0.0
Authority and Catalogue No.	A. E.	722		726	A. E.	730

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Centauri.		ϵ Corvi.		δ Crucis.	
	2.88	B 3 p	3.21	K 0	3.08	B 3
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 12 04	[°] ['] 50 15	^h ^m 12 06	[°] ['] 22 12	^h ^m 12 11	[°] ['] 58 20
Jan. 1.2	36.267 ⁵	55.86 ²²⁸	24.206 ⁵	56.49 ²³⁴	17.705 ⁵⁰⁹	31.02 ²¹¹
11.2	36.704 ⁴³⁷	58.14 ²⁶⁵	24.547 ³⁴¹	58.83 ²⁴⁴	18.214 ⁴⁷⁶	33.13 ²⁵⁵
21.2	37.110 ³⁶⁶	60.79 ²⁹⁵	24.867 ³²⁰	61.27 ²⁴⁹	18.690 ⁴²⁹	35.68 ²⁹¹
31.1	37.475 ³⁶⁵	63.74 ²⁹⁵	25.157 ²⁹⁰	63.76 ²⁴⁹	19.119 ⁴²⁹	38.59 ²⁹¹
Feb. 10.1	37.790 ³¹⁵	66.89 ³¹⁵	25.411 ²⁵⁴	66.22 ²⁴⁶	19.492 ³⁷³	41.78 ³¹⁹
20.1	38.050 ²⁶⁰	70.17 ³²⁸	25.624 ²¹³	68.59 ²³⁷	19.801 ³⁰⁹	45.15 ³³⁷
Mar. 1.1	38.253 ²⁰³	73.49 ³³²	25.793 ¹⁶⁹	70.82 ²²³	20.044 ²⁴³	48.64 ³⁴⁹
11.0	38.597 ¹⁴⁴	76.78 ³²⁹	25.919 ¹²⁶	72.86 ²⁰⁴	20.218 ¹⁷⁴	52.14 ³⁵⁰
21.0	38.885 ⁸⁸	79.96 ³¹⁸	26.004 ⁸⁵	74.70 ¹⁸⁴	20.326 ¹⁰⁸	55.59 ³⁴⁵
31.0	38.520 ³⁵	82.98 ³⁰²	26.050 ⁴⁶	76.32 ¹⁶²	20.370 ⁴⁴	58.91 ³³²
Apr. 10.0	38.506 ¹⁴	85.79 ²⁸¹	26.061 ¹¹	77.69 ¹³⁷	20.354 ¹⁶	62.05 ³¹⁴
10.9	38.449 ⁵⁷	88.33 ²⁵⁴	26.043 ¹⁸	78.81 ¹¹²	20.284 ⁷⁰	64.95 ²⁹⁰
20.9	38.353 ⁹⁶	90.56 ²²³	26.000 ⁴³	79.69 ⁸⁸	20.164 ¹²⁰	67.54 ²⁵⁹
May 9.9	38.223 ¹³⁰	92.45 ¹⁸⁹	25.935 ⁶⁵	80.32 ⁶³	20.000 ¹⁶⁴	69.79 ²²⁵
10.8	38.065 ¹⁵⁸	93.06 ¹⁵¹	25.854 ⁸¹	80.71 ³⁹	19.799 ²⁰¹	71.66 ¹⁸⁷
29.8	37.881 ¹⁸¹	95.06 ¹¹⁰	25.759 ⁹⁵	80.85 ¹⁴	19.565 ²³⁴	73.10 ¹⁴⁴
June 8.8	37.684 ²⁰⁰	95.75 ⁶⁰	25.654 ¹⁰⁵	80.76 ⁹	19.306 ²⁵⁹	74.10 ¹⁰⁰
18.8	37.471 ²¹³	96.01 ²⁶	25.543 ¹¹¹	80.44 ³²	19.027 ²⁷⁹	74.63 ⁵³
28.7	37.252 ²¹⁹	95.84 ¹⁷	25.428 ¹¹⁵	79.91 ⁵³	18.736 ²⁹¹	74.68 ⁵
July 8.7	37.031 ²²¹	95.23 ⁶¹	25.312 ¹¹⁶	79.18 ⁷³	18.442 ²⁹⁴	74.26 ⁴²
18.7	36.815 ²¹⁶	94.22 ¹⁰¹	25.201 ¹¹¹	78.27 ⁹¹	18.153 ²⁸⁹	73.38 ⁸⁸
28.7	36.612 ²⁰³	92.85 ¹³⁷	25.098 ¹⁰³	77.22 ¹⁰⁵	17.878 ²⁷⁵	72.07 ¹³¹
Aug 7.6	36.429 ¹⁸³	91.14 ¹⁷¹	25.006 ⁶²	76.06 ¹¹⁶	17.628 ²⁵⁰	70.37 ¹⁷⁰
17.6	36.275 ¹⁵⁴	89.15 ¹⁹⁰	24.930 ⁷⁶	74.83 ¹²³	17.412 ²¹⁶	68.34 ²⁰³
27.6	36.155 ¹¹⁸	86.95 ²²⁰	24.877 ⁵³	73.58 ¹²⁵	17.241 ¹⁷¹	66.03 ²³¹
Sept 6.5	36.085 ⁷²	84.63 ²³²	24.852 ²⁵	72.37 ¹²¹	17.126 ¹¹⁵	63.55 ²⁴⁸
16.5	36.004 ²¹	82.28 ²³⁵	24.860 ⁸	71.26 ¹¹¹	17.074 ⁵²	60.97 ²⁵⁸
26.5	36.102 ³⁹	79.98 ²³⁰	24.905 ⁴⁵	70.31 ⁹⁵	17.095 ²¹	58.39 ²⁵⁸
Oct. 6.5	36.204 ¹⁰²	77.84 ²¹⁴	24.995 ⁸⁸	69.59 ⁷²	17.193 ⁹⁸	55.94 ²⁴⁵
16.4	36.371 ¹⁶⁷	75.95 ¹⁸⁹	25.126 ¹³³	69.15 ⁴⁴	17.372 ¹⁷⁹	53.71 ²²³
26.4	36.603 ²³²	74.42 ¹⁵³	25.305 ¹⁷⁹	69.03 ¹²	17.630 ²⁵⁸	51.81 ¹⁹⁰
Nov. 5.4	36.805 ²⁶⁵	73.31 ¹¹¹	25.529 ²²⁴	69.28 ²⁵	17.964 ³³⁴	50.32 ¹⁴⁹
15.4	37.055 ³²¹	72.70 ⁶¹	25.795 ²⁶⁶	69.92 ⁶⁴	18.365 ⁴⁰¹	49.32 ¹⁰⁰
25.3	37.041 ³¹⁸	72.61 ⁹	26.097 ³⁰²	70.95 ¹⁰³	18.823 ⁴⁵⁸	48.87 ⁴⁵
Dec. 5.3	38.031 ⁴¹³	71.08 ⁴⁷	26.427 ³³⁰	72.35 ¹⁴⁰	19.324 ⁵⁰¹	49.00 ¹³
15.3	38.536 ⁴⁵⁵	71.11 ¹⁰³	26.775 ³⁴⁸	74.09 ¹⁷⁴	19.852 ⁵²⁸	49.72 ⁷²
25.2	38.997 ⁴⁶¹	75.66 ¹⁵⁵	27.131 ³⁵⁶	76.12 ²⁰³	20.388 ⁵³⁶	51.01 ¹²⁹
35.2	39.457 ⁴⁵³	77.69 ²⁰³	27.483 ³⁵²	78.37 ²²⁵	20.914 ⁵²⁶	52.83 ¹⁸²
Mean Place	37 118	77.06	25.071	69.37	18.637	54.02
S. S. Tan δ	1 506	-1.205	1.080	-0.408	1.926	-1.622
L. a, L. δ	0	-0.4	0.00	-0.4	0.00	-0.4
W. a, W. δ	-0.08	0.0	-0.03	0.0	-0.11	0.0
Ar. circ. and C. circ. no. 2.	A. E.	733	A. E.	735	A. N.	738

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Ursæ Majoris.		γ Corvi.		β Chamæleontis.	
	3.44	A 2	2.78	B 8	4.38	B 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 12 11	[°] ['] 57 25	^h ^m 12 12	[°] ['] 17 08	^h ^m 12 13	[°] ['] 78 54
Jan. 1.2	51.599 ^s	45.68 ["]	05.092 ^s	20.82 ["]	64.23 ^s	19.14 ["]
11.2	52.130 ⁵³¹	44.82 ⁸⁶	05.427 ³³⁵	23.11 ²²⁹	65.43 ¹²⁰	20.85 ¹⁷¹
21.2	52.640 ⁵¹⁰	44.57 ²⁵	05.744 ³¹⁷	25.46 ²³⁵	66.55 ¹¹²	23.11 ²²⁶
31.1	53.111 ⁴⁷¹	44.91 ³⁴	06.033 ²⁸⁹	27.80 ²³⁴	67.55 ¹⁰⁰	25.85 ²⁷⁴
Feb. 10.1	53.530 ⁴¹⁹	45.83 ⁹²	06.287 ²⁵⁴	30.06 ²²⁶	68.42 ⁸⁷	29.00 ³¹⁵
20.1	53.885 ³⁵⁵	47.27 ¹⁴⁴	06.502 ²¹⁵	32.20 ²¹⁴	69.13 ⁷¹	32.46 ³⁴⁶
Mar. 1.1	54.168 ²⁸³	49.15 ¹⁸⁸	06.675 ¹⁷³	34.17 ¹⁹⁷	69.67 ⁵⁴	36.14 ³⁶⁸
11.0	54.373 ²⁰⁵	51.40 ²²⁵	06.806 ¹³¹	35.94 ¹⁷⁷	70.05 ³⁸	39.96 ³⁸²
21.0	54.500 ¹²⁷	53.89 ²⁴⁹	06.896 ⁹⁰	37.49 ¹⁵⁵	70.25 ²⁰	43.82 ³⁸⁶
31.0	54.550 ⁵⁰	56.53 ²⁶⁴	06.950 ⁵⁴	38.81 ¹³²	70.28 ³	47.65 ³⁸³
Apr. 10.0	54.530 ²⁰	59.19 ²⁶⁶	06.969 ¹⁹	39.89 ¹⁰⁸	70.14 ¹⁴	51.36 ³⁷¹
19.9	54.446 ⁸⁴	61.77 ²⁵⁸	06.959 ¹⁰	40.74 ⁸⁵	69.85 ²⁹	54.88 ³⁵²
29.9	54.307 ¹³⁹	64.17 ²⁴⁰	06.925 ³⁴	41.36 ⁶²	69.41 ⁴⁴	58.13 ³²⁵
May 9.9	54.123 ¹⁸⁴	66.31 ²¹⁴	06.869 ⁵⁶	41.77 ⁴¹	68.83 ⁵⁸	61.05 ²⁹²
19.8	53.903 ²²⁰	68.11 ¹⁸⁰	06.796 ⁷³	41.96 ¹⁹	68.13 ⁷⁰	63.59 ²⁵⁴
29.8	53.658 ²⁴⁵	69.52 ¹⁴¹	06.710 ⁸⁶	41.95 ¹	67.33 ⁸⁰	65.68 ²⁰⁹
June 8.8	53.397 ²⁶¹	70.49 ⁹⁷	06.614 ⁹⁶	41.76 ¹⁹	66.45 ⁸⁸	67.29 ¹⁶¹
18.8	53.128 ²⁶⁹	71.00 ⁵¹	06.511 ¹⁰³	41.38 ³⁸	65.50 ⁹⁵	68.37 ¹⁰⁸
28.7	52.859 ²⁶⁹	71.03 ³	06.404 ¹⁰⁷	40.83 ⁵⁵	64.52 ⁹⁸	68.92 ⁵⁵
July 8.7	52.599 ²⁶⁰	70.59 ⁴⁴	06.296 ¹⁰⁸	40.14 ⁶⁹	63.52 ¹⁰⁰	68.91 ¹
18.7	52.354 ²⁴⁵	69.67 ⁹²	06.190 ¹⁰⁶	39.51 ⁸³	62.54 ⁹⁸	68.35 ⁵⁶
28.7	52.131 ²²³	68.31 ¹³⁶	06.091 ⁹⁹	38.39 ⁹²	61.61 ⁹³	67.25 ¹¹⁰
Aug. 7.6	51.936 ¹⁹⁵	66.52 ¹⁷⁹	06.003 ⁸⁸	37.39 ¹⁰⁰	60.75 ⁸⁶	65.65 ¹⁶⁰
17.6	51.775 ¹⁶¹	64.34 ²¹⁸	05.930 ⁷³	36.37 ¹⁰²	60.00 ⁷⁵	63.61 ²⁰⁴
27.6	51.655 ¹²⁰	61.80 ²⁵⁴	05.877 ⁵³	35.36 ¹⁰¹	59.39 ⁶¹	61.19 ²⁴²
Sept. 6.5	51.579 ⁷⁶	58.96 ²⁸⁴	05.850 ²⁷	34.42 ⁹⁴	58.94 ⁴⁵	58.48 ²⁷¹
16.5	51.556 ²³	55.85 ³¹¹	05.854 ⁴	33.59 ⁸³	58.67 ²⁷	55.56 ²⁹²
26.5	51.591 ³⁵	52.54 ³³¹	05.895 ⁴¹	32.93 ⁶⁶	58.60 ⁷	52.56 ³⁰⁰
Oct. 6.5	51.688 ⁹⁷	49.09 ³⁴⁵	05.977 ⁸²	32.50 ⁴³	58.74 ¹⁴	49.58 ²⁹⁸
16.4	51.850 ¹⁶²	45.56 ³⁵³	06.102 ¹²⁵	32.35 ¹⁵	59.10 ³⁶	46.76 ²⁸²
26.4	52.080 ²³⁰	42.03 ³⁵³	06.272 ¹⁷⁰	32.51 ¹⁶	59.67 ⁵⁷	44.20 ²⁵⁶
Nov. 5.4	52.378 ²⁹⁸	38.57 ³⁴⁶	06.485 ²¹³	33.01 ⁵⁰	60.44 ⁷⁷	42.02 ²¹⁸
15.4	52.740 ³⁶²	35.28 ³²⁹	06.741 ²⁵⁶	33.87 ⁸⁶	61.37 ⁹³	40.31 ¹⁷¹
25.3	53.160 ⁴²⁰	32.24 ³⁰⁴	07.032 ²⁹¹	35.07 ¹²⁰	62.45 ¹⁰⁸	39.15 ¹¹⁶
Dec. 5.3	53.630 ⁴⁷⁰	29.53 ²⁷¹	07.352 ³²⁰	36.61 ¹⁵⁴	63.63 ¹¹⁸	38.60 ⁵⁵
15.3	54.138 ⁵⁰⁸	27.25 ²²⁸	07.691 ³³⁹	38.43 ¹⁸²	64.87 ¹²⁴	38.69 ⁹
25.2	54.668 ⁵³⁰	25.46 ¹⁷⁹	08.040 ³⁴⁹	40.50 ²⁰⁷	66.13 ¹²⁶	39.43 ⁷⁴
35.2	55.205 ⁵³⁷	24.22 ¹²⁴	08.386 ³⁴⁶	42.72 ²²²	67.37 ¹²⁴	40.79 ¹³⁶
Mean Place	52.150	57.10	05.989	31.94	65.233	45.25
Sec δ , Tan δ	+1.858	+1.566	1.046	-0.308	5.200	-5.103
L α , L δ	0.00	-0.4	0.00	-0.4	+0.01	-0.4
$\omega \alpha$, $\omega \delta$	+0.10	0.0	-0.02	0.0	-0.34	-0.1
Authority and Catalogue No.	A. E.	739	A. N.	740	A. E.	742

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	η Virginis.		α^1 Crucis.		δ Corvi.	
	4.00	A 0	1.58	B 1	3.11	A 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 12 10	^o 0 15	^h 12 22	^o 62 41	^h 12 26	^o 16 06
Jan. 1.2	12.350	55.17	33.65	36.83	07.114	42.25
11.2	12.680	57.31	34.23	38.75	07.452	44.49
21.2	12.093	59.33	34.77	41.14	07.775	46.79
31.2	13.280	61.17	35.26	43.93	08.072	49.07
Feb. 10.1	13.535	62.78	35.69	47.05	08.336	51.28
20.1	13.752	64.14	36.06	50.40	08.563	53.36
Mar. 1.1	13.929	65.22	36.35	53.91	08.749	55.27
11.0	14.064	66.03	36.57	57.48	08.895	56.97
21.0	14.159	66.56	36.71	61.03	09.000	58.46
31.0	14.217	66.85	36.78	64.50	09.068	59.72
Apr. 10.0	14.242	66.93	36.78	67.82	09.103	60.75
19.9	14.238	66.82	36.71	70.90	09.107	61.56
29.9	14.209	66.55	36.59	73.72	09.086	62.15
May 9.9	14.160	66.16	36.41	76.21	09.042	62.53
19.9	14.095	65.67	36.18	78.32	08.979	62.71
29.8	14.017	65.12	35.92	80.02	08.902	62.71
June 8.8	13.930	64.53	35.62	81.27	08.813	62.53
18.8	13.837	63.92	35.29	82.04	08.715	62.19
28.7	13.741	63.30	34.95	82.32	08.611	61.70
July 8.7	13.645	62.70	34.60	82.11	08.503	61.07
18.7	13.551	62.13	34.25	81.41	08.396	60.32
28.7	13.463	61.62	33.91	80.25	08.292	59.48
Aug 7.6	13.384	61.18	33.60	78.66	08.197	58.58
17.6	13.320	60.85	33.32	76.70	08.115	57.65
27.6	13.274	60.65	33.10	74.42	08.052	56.73
Sept. 6.6	13.251	60.60	32.94	71.92	08.013	55.88
16.5	13.257	60.73	32.85	69.28	08.004	55.13
26.5	13.295	61.08	32.84	66.60	08.031	54.55
Oct. 6.5	13.371	61.67	32.92	63.99	08.097	54.19
16.4	13.488	62.52	33.09	61.57	08.207	54.08
26.4	13.648	63.64	33.35	59.45	08.363	54.27
Nov. 5.4	13.850	65.02	33.70	57.69	08.564	54.78
15.4	14.092	66.66	34.14	56.42	08.808	55.64
25.3	14.370	68.51	34.64	55.69	09.090	56.84
Dec. 5.3	14.678	70.55	35.19	55.54	09.403	58.36
15.3	14.926	72.70	35.77	55.99	09.738	60.15
25.3	15.241	74.91	36.37	57.03	10.084	62.18
35.2	15.682	77.10	36.97	58.63	10.431	64.36
Mean Place	13.239	60.30	34.759	60.67	08.102	52.91
Sec. δ , Tan δ	1.000	-0.0005	2.180	-1.957	1.041	-0.289
L , a , L , δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω , a , ω , δ	0.00	-0.1	-0.13	-0.1	-0.02	-0.1
Authority and Catalogue No.	A. E.	744	A. E.	748	A. E.	755

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Crucis.		β Corvi.		α Muscae.	
	1.61	M b	2.84	G 5	2.94	B 3
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 12 27	^m 56 42	^h 12 30	^m 22 59	^h 12 32	^m 68 43
Jan. 1.2	08.467 ^s	13.74 ["]	34.995 ^s	42.35 ["]	50.84 ^s	55.56 ["]
11.2	08.971 ⁵⁰⁴	15.70 ¹⁹⁶	35.345 ³⁵⁰	44.58 ²²³	51.55 ⁷¹	57.24 ¹⁶⁸
21.2	09.446 ⁴⁷⁵	18.09 ²³⁹	35.678 ³³³	46.93 ²³⁵	52.22 ⁶⁷	59.43 ²¹⁹
31.2	09.881 ⁴³⁵	20.86 ²⁷⁷	35.985 ³⁰⁷	49.34 ²⁴¹	52.84 ⁶²	62.07 ²⁶⁴
Feb. 10.1	10.265 ³⁸⁴	23.91 ³⁰⁵	36.259 ²⁷⁴	51.75 ²⁴¹	53.39 ⁵⁵	65.09 ³⁰²
20.1	10.592 ³²⁷	27.17 ³²⁶	36.495 ²³⁶	54.08 ²³³	53.85 ⁴⁶	68.40 ³³¹
Mar. 1.1	10.857 ²⁶⁵	30.53 ³³⁶	36.690 ¹⁹⁵	56.30 ²²²	54.23 ³⁸	71.91 ³⁵¹
11.1	11.058 ²⁰¹	33.94 ³⁴¹	36.843 ¹⁵³	58.36 ²⁰⁶	54.52 ²⁹	75.55 ³⁶⁴
21.0	11.196 ¹³⁸	37.32 ³³⁸	36.956 ¹¹³	60.23 ¹⁸⁷	54.71 ¹⁹	79.22 ³⁶⁷
31.0	11.273 ⁷⁷	40.60 ³²⁸	37.030 ⁷⁴	61.89 ¹⁶⁶	54.81 ¹⁰	82.85 ³⁶³
Apr. 10.0	11.293 ²⁰	43.72 ³¹²	37.069 ³⁹	63.33 ¹⁴⁴	54.83 ²	86.36 ³⁵¹
19.9	11.259 ³⁴	46.61 ²⁸⁹	37.077 ⁸	64.53 ¹²⁰	54.76 ⁷	89.68 ³³²
29.9	11.177 ⁸²	49.22 ²⁶¹	37.057 ²⁰	65.50 ⁹⁷	54.61 ¹⁵	92.76 ³⁰⁸
May 9.9	11.050 ¹²⁷	51.52 ²³⁰	37.014 ⁴³	66.24 ⁷⁴	54.39 ²²	95.53 ²⁷⁷
19.9	10.885 ¹⁶⁵	53.45 ¹⁹³	36.950 ⁶⁴	66.74 ⁵⁰	54.11 ²⁸	97.93 ²⁴⁰
29.8	10.685 ²⁰⁰	54.99 ¹⁵⁴	36.870 ⁸⁰	67.01 ²⁷	53.77 ³⁴	99.92 ¹⁹⁹
June 8.8	10.457 ²²⁸	56.11 ¹¹²	36.776 ⁹⁴	67.05 ⁴	53.38 ³⁹	101.46 ¹⁵⁴
18.8	10.207 ²⁵⁰	56.78 ⁶⁷	36.671 ¹⁰⁵	66.87 ¹⁸	52.95 ⁴³	102.52 ¹⁰⁶
28.8	09.941 ²⁶⁶	56.99 ²¹	36.558 ¹¹³	66.48 ³⁹	52.49 ⁴⁶	103.07 ⁵⁵
July 8.7	09.666 ²⁷⁵	56.73 ²⁶	36.440 ¹¹⁸	65.88 ⁶⁰	52.02 ⁴⁷	103.10 ³
18.7	09.391 ²⁷⁵	56.03 ⁷⁰	36.322 ¹¹⁸	65.11 ⁷⁷	51.55 ⁴⁷	102.61 ⁴⁹
28.7	09.126 ²⁶⁵	54.90 ¹¹³	36.207 ¹¹⁵	64.18 ⁹³	51.09 ⁴⁶	101.63 ⁹⁸
Aug. 7.6	08.879 ²⁴⁷	53.38 ¹⁵²	36.101 ¹⁰⁶	63.13 ¹⁰⁵	50.66 ⁴³	100.18 ¹⁴⁵
17.6	08.661 ²¹⁸	51.51 ¹⁸⁷	36.008 ⁹³	61.99 ¹¹⁴	50.28 ³⁸	98.30 ¹⁸⁸
27.6	08.481 ¹⁸⁰	49.36 ²¹⁵	35.934 ⁷⁴	60.81 ¹¹⁸	49.96 ³²	96.06 ²²⁴
Sept. 6.6	08.351 ¹³⁰	47.01 ²³⁵	35.886 ⁴⁸	59.64 ¹¹⁷	49.71 ²⁵	93.54 ²⁵²
16.5	08.281 ⁷⁰	44.54 ²⁴⁷	35.869 ¹⁷	58.54 ¹¹⁰	49.55 ¹⁶	90.83 ²⁷¹
26.5	08.277 ⁴	42.06 ²⁴⁸	35.890 ²¹	57.57 ⁹⁷	49.50 ⁵	88.03 ²⁸⁰
Oct. 6.5	08.348 ⁷¹	39.66 ²⁴⁰	35.953 ⁶³	56.79 ⁷⁸	49.56 ⁶	85.25 ²⁷⁸
16.5	08.496 ¹⁴⁸	37.45 ²²¹	36.062 ¹⁰⁹	56.27 ⁵²	49.74 ¹⁸	82.61 ²⁶⁴
26.4	08.722 ²²⁶	35.54 ¹⁹¹	36.218 ¹⁵⁶	56.05 ²²	50.03 ²⁹	80.22 ²³⁹
Nov. 5.4	09.023 ³⁰¹	34.02 ¹⁵²	36.422 ²⁰⁴	56.17 ¹²	50.43 ⁴⁰	78.19 ²⁰³
15.4	09.393 ³⁷⁰	32.95 ¹⁰⁷	36.671 ²⁴⁹	56.67 ⁵⁰	50.94 ⁵¹	76.61 ¹⁵⁸
25.3	09.822 ⁴²⁹	32.41 ⁵⁴	36.960 ²⁸⁹	57.54 ⁸⁷	51.53 ⁵⁹	75.54 ¹⁰⁷
Dec. 5.3	10.298 ⁴⁷⁶	32.42 ¹	37.281 ³²¹	58.78 ¹²⁴	52.19 ⁶⁶	75.07 ⁴⁷
15.3	10.803 ⁵⁰⁵	32.99 ⁵⁷	37.626 ³⁴⁵	60.37 ¹⁵⁹	52.90 ⁷¹	75.20 ¹³
25.3	11.323 ⁵²⁰	34.14 ¹¹⁵	37.983 ³⁵⁷	62.25 ¹⁸⁸	53.63 ⁷³	75.94 ⁷⁴
35.2	11.841 ⁵¹⁸	35.81 ¹⁶⁷	38.340 ³⁵⁷	64.37 ²¹²	54.36 ⁷³	77.28 ¹³⁴
Mean Place	09.614	36.33	36.034	55.34	52.222	80.33
Sec δ , Tan δ	1.822	-1.523	1.086	-0.424	2.758	-2.570
L α , L δ	0.00	-0.4	0.00	-0.4	+0.01	-0.4
ω , α , ω δ	-0.10	-0.1	-0.03	-0.1	-0.17	-0.1
Authority and Catalogue No.	A. N.	757	A. E.	761	A. E.	764

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Centauri m.		γ Virginis m.		ρ Virginis.	
	2.38	A o	2.91	F o	4.95	A o
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 12 ^m 37	^o 48 ['] 33	^h 12 ^m 37	^o 1 03	^h 12 ^m 38	^o 10 ['] 37
Jan. 1.2	30.964 ^s	31.44 ^s	59.546 ^s	11.59 ^s	13.379 ^s	56.94 ^s
11.2	31.406 ⁴¹²	33.40 ¹⁹⁶	59.878 ³³²	13.74 ²¹⁵	13.718 ³³⁹	54.89 ²⁰⁵
21.2	31.827 ⁴²¹	35.74 ²³⁴	60.197 ³¹⁹	15.78 ²⁰⁴	14.044 ³²⁶	53.07 ¹⁸²
31.2	32.216 ³⁸⁹	38.39 ²⁶⁵	60.494 ²⁹⁷	17.65 ¹⁸⁷	14.348 ³⁰⁴	51.53 ¹⁵⁴
Feb. 10.1	32.563 ³⁴⁷	41.27 ²⁸⁸	60.762 ²⁶⁸	19.31 ¹⁶⁶	14.623 ²⁷⁵	50.32 ¹²¹
20.1	32.863 ³⁰⁰	44.31 ³⁰⁴	60.994 ²³²	20.72 ¹⁴¹	14.862 ²³⁹	49.45 ⁸⁷
Mar. 1.1	33.111 ²⁴⁸	47.43 ³¹²	61.189 ¹⁹⁵	21.86 ¹¹⁴	15.062 ²⁰⁰	48.93 ⁵²
11.1	33.305 ¹⁹⁴	50.55 ³¹²	61.344 ¹⁵⁵	22.72 ⁸⁶	15.222 ¹⁶⁰	48.73 ²⁰
21.0	33.446 ¹⁴¹	53.61 ³⁰⁶	61.461 ¹¹⁷	23.31 ⁵⁹	15.341 ¹¹⁹	48.84 ¹¹
31.0	33.537 ⁹¹	56.56 ²⁹⁵	61.541 ⁸⁰	23.65 ³⁴	15.422 ⁸¹	49.21 ³⁷
Apr. 10.0	33.580 ⁴³	59.34 ²⁷⁸	61.587 ⁴⁶	23.76 ¹¹	15.468 ⁴⁶	49.78 ⁵⁷
19.9	33.578 ²	61.90 ²⁵⁶	61.603 ¹⁶	23.69 ⁷	15.482 ¹⁴	50.53 ⁷⁵
29.9	33.536 ⁴²	64.20 ²³⁰	61.593 ¹⁰	23.45 ²⁴	15.470 ¹²	51.38 ⁸⁵
May 9.9	33.458 ⁷⁸	66.20 ²⁰⁰	61.561 ³²	23.08 ³⁷	15.434 ³⁶	52.31 ⁹³
19.9	33.347 ¹¹¹	67.87 ¹⁶⁷	61.510 ⁵¹	22.62 ⁴⁶	15.380 ⁵⁴	53.25 ⁹⁴
29.8	33.208 ¹³⁹	69.18 ¹³¹	61.443 ⁶⁷	22.08 ⁵⁴	15.309 ⁷¹	54.18 ⁹³
June 8.8	33.045 ¹⁶³	70.11 ⁹³	61.364 ⁷⁹	21.50 ⁵⁸	15.226 ⁸³	55.02 ⁸⁴
18.8	32.801 ¹⁸⁴	70.65 ⁵⁴	61.275 ⁸⁹	20.89 ⁶¹	15.133 ⁹³	55.79 ⁷⁷
28.8	32.663 ¹⁹⁸	70.78 ¹³	61.180 ⁹⁵	20.28 ⁶¹	15.035 ⁹⁸	56.46 ⁶⁷
July 8.7	32.456 ²⁰⁷	70.51 ²⁷	61.080 ¹⁰⁰	19.68 ⁶⁰	14.933 ¹⁰²	57.00 ⁵⁴
18.7	32.246 ²¹⁰	69.84 ⁶⁷	60.981 ⁹⁹	19.11 ⁵⁷	14.831 ¹⁰²	57.39 ³⁹
28.7	32.039 ²⁰⁷	68.79 ¹⁰⁵	60.882 ⁹⁹	18.60 ⁵¹	14.732 ⁹⁹	57.63 ²⁴
Aug. 7.6	31.844 ¹⁹⁵	67.40 ¹³⁹	60.790 ⁹²	18.16 ⁴⁴	14.641 ⁹¹	57.70 ⁷
17.6	31.670 ¹⁷⁴	65.72 ¹⁶⁸	60.709 ⁸¹	17.81 ³⁵	14.561 ⁸⁰	57.57 ¹³
27.6	31.524 ¹⁴⁶	63.80 ¹⁹²	60.645 ⁶⁴	17.58 ²³	14.496 ⁶⁵	57.24 ³³
Sept. 6.6	31.417 ¹⁰⁷	61.70 ²¹⁰	60.602 ⁴³	17.51 ⁷	14.454 ⁴²	56.71 ⁵³
16.5	31.350 ⁶¹	59.52 ²¹⁸	60.585 ¹⁷	17.61 ¹⁰	14.439 ¹⁵	55.94 ⁷⁷
26.5	31.349 ⁷	57.35 ²¹⁷	60.602 ¹⁷	17.92 ³¹	14.455 ¹⁶	54.93 ¹⁰¹
Oct. 6.5	31.403 ⁵⁴	55.27 ²⁰⁸	60.655 ⁵³	18.46 ⁵⁴	14.509 ⁵⁴	53.68 ¹²⁵
16.5	31.521 ¹¹⁸	53.38 ¹⁸⁹	60.750 ⁹⁵	19.25 ⁷⁹	14.603 ⁹⁴	52.19 ¹⁴⁹
26.4	31.705 ¹⁸⁴	51.77 ¹⁶¹	60.889 ¹³⁹	20.31 ¹⁰⁶	14.742 ¹³⁹	50.46 ¹⁷³
Nov. 5.4	31.955 ²⁵⁰	50.53 ¹²⁴	61.071 ¹⁸²	21.63 ¹³²	14.924 ¹⁸²	48.52 ¹⁹⁴
15.4	32.265 ³¹⁰	49.73 ⁸⁰	61.296 ²²⁵	23.21 ¹⁵⁸	15.149 ²²⁵	46.39 ²¹³
25.3	32.628 ³⁶³	49.41 ³²	61.560 ²⁶⁴	25.02 ¹⁸¹	15.414 ²⁶⁵	44.13 ²²⁶
Dec. 5.3	33.034 ⁴⁰⁶	49.61 ²⁰	61.856 ²⁹⁶	27.01 ¹⁹⁹	15.712 ²⁹⁸	41.78 ²³⁵
15.3	33.469 ⁴³⁵	50.33 ⁷²	62.175 ³¹⁹	29.13 ²¹²	16.034 ³²²	39.42 ²³⁶
25.3	33.920 ⁴⁵¹	51.56 ¹²³	62.510 ³³⁵	31.33 ²²⁰	16.372 ³³⁸	37.11 ²³¹
35.2	34.372 ⁴⁵²	53.27 ¹⁷¹	62.850 ³⁴⁰	33.53 ²²⁰	16.716 ³⁴⁴	34.93 ²¹⁸
Mean Place	32.180	52.03	60.567	16.79	14.366	55.88
Sec δ , Tan δ	1.511	-1.133	1.000	-0.018	1.017	+0.188
L α , L δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω α , ω δ	-0.07	-0.2	0.00	-0.2	+0.01	-0.2
Auth. rity and Catal. us No.	A. E.	768	A. N.	769	770	

No. 769. The reductions from mean to brighter star vary during the year from +0.128, -2.40 to +0.129, -2.39. The signs should be changed for reductions from mean to fainter star.

APPARENT PLACES OF STARS, 1928.

355

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Muscae m.		β Crucis.		35 Virginis.	
	3.26	B 3	1.50	B 1	6.66	Ma
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 12 41	[°] 67 42	^h 12 43	[°] 59 17	^h 12 44	[°] 3 57
Jan. 1.3	49.19 ^s	26.58 ^s	28.656 ^s	20.27 ^s	10.310 ^s	59.50 ^s
11.2	49.88 ⁶⁹	28.15 ¹⁵⁷	29.199 ⁵⁴³	21.99 ¹⁷²	10.645 ³³⁵	57.38 ²¹²
21.2	50.54 ⁶⁶	30.24 ²⁰⁹	29.717 ⁵¹⁸	24.17 ²¹⁸	10.969 ³²⁴	55.42 ¹⁹⁶
31.2	51.15 ⁶¹	32.78 ²⁵⁴	30.198 ⁴⁸¹	26.76 ²⁵⁹	11.272 ³⁰³	53.68 ¹⁷⁴
Feb. 10.1	51.69 ⁵⁴	35.71 ²⁹³	30.630 ⁴³²	29.67 ²⁹¹	11.545 ²⁷³	52.20 ¹⁴⁸
20.1	52.16 ⁴⁷	38.93 ³²²	31.004 ³⁷⁴	32.82 ³¹⁵	11.785 ²⁴⁰	51.01 ¹¹⁹
Mar. 1.1	52.55 ³⁹	42.37 ³⁴⁴	31.314 ³¹⁰	36.14 ³³²	11.987 ²⁰²	50.13 ⁸⁸
11.1	52.85 ³⁰	45.94 ³⁵⁷	31.558 ²⁴⁴	39.54 ³⁴⁰	12.149 ¹⁶²	49.55 ⁵⁸
21.0	53.06 ²¹	49.56 ³⁶²	31.736 ¹⁷⁸	42.95 ³⁴¹	12.273 ¹²⁴	49.26 ²⁹
31.0	53.19 ¹³	53.15 ³⁵⁹	31.849 ¹¹³	46.29 ³³⁴	12.360 ⁸⁷	49.22 ⁴
Apr. 10.0	53.24 ⁵	56.64 ³⁴⁹	31.901 ⁵²	49.51 ³²²	12.413 ⁵³	49.41 ¹⁹
20.0	53.20 ⁴	59.96 ³³²	31.893 ⁸	52.53 ³⁰²	12.435 ²²	49.79 ³⁸
29.9	53.09 ¹¹	63.04 ³⁰⁸	31.831 ⁶²	55.31 ²⁷⁸	12.430 ⁵	50.31 ⁵²
May 9.9	52.91 ¹⁸	65.84 ²⁸⁰	31.718 ¹¹³	57.80 ²⁴⁹	12.402 ²⁸	50.92 ⁶¹
19.9	52.66 ²⁵	68.28 ²⁴⁴	31.560 ¹⁵⁸	59.95 ²¹⁵	12.355 ⁴⁷	51.61 ⁶⁹
29.8	52.35 ³¹	70.32 ²⁰⁴	31.362 ¹⁹⁸	61.72 ¹⁷⁷	12.292 ⁶³	52.32 ⁷¹
June 8.8	52.00 ³⁵	71.92 ¹⁶⁰	31.128 ²³⁴	63.06 ¹³⁴	12.216 ⁷⁶	53.03 ⁷¹
18.8	51.61 ³⁹	73.05 ¹¹³	30.864 ²⁶⁴	63.97 ⁹¹	12.129 ⁸⁷	53.73 ⁷⁰
28.8	51.19 ⁴²	73.69 ⁶⁴	30.579 ²⁸⁵	64.41 ⁴⁴	12.034 ⁹⁵	54.38 ⁶⁵
July 8.7	50.75 ⁴⁴	73.81 ¹²	30.280 ²⁹⁹	64.39 ²	11.935 ⁹⁹	54.96 ⁵⁸
18.7	50.29 ⁴⁶	73.42 ³⁹	29.975 ³⁰⁵	63.90 ⁴⁹	11.833 ¹⁰²	55.47 ⁵¹
28.7	49.85 ⁴⁴	72.54 ⁸⁸	29.675 ³⁰⁰	62.56 ⁹⁴	11.734 ⁹⁹	55.88 ⁴¹
Aug. 7.7	49.44 ⁴¹	71.18 ¹³⁶	29.390 ²⁸⁵	61.60 ¹³⁶	11.641 ⁹³	56.16 ²⁸
17.6	49.06 ³⁸	69.40 ¹⁷⁸	29.131 ²⁵⁹	59.86 ¹⁷⁴	11.558 ⁸³	56.32 ¹⁶
27.6	48.74 ³²	67.25 ²¹⁵	28.912 ²¹⁹	57.80 ²⁰⁶	11.490 ⁶⁸	56.32 [—]
Sept. 6.6	48.49 ²⁵	64.81 ²⁴⁴	28.742 ¹⁷⁰	55.50 ²³⁰	11.443 ⁴⁷	56.13 ¹⁹
16.5	48.33 ¹⁶	62.16 ²⁶⁵	28.634 ¹⁰⁸	53.03 ²⁴⁷	11.422 ²¹	55.74 ³⁹
26.5	48.26 ⁷	59.41 ²⁷⁵	28.597 ³⁷	50.50 ²⁵³	11.434 ¹²	55.13 ⁶¹
Oct. 6.5	48.30 ⁴	56.66 ²⁷⁵	28.638 ⁴¹	48.01 ²⁴⁹	11.481 ⁴⁷	54.29 ⁸⁴
16.5	48.45 ¹⁵	54.03 ²⁶³	28.763 ¹²⁵	45.66 ²³⁵	11.570 ⁸⁹	53.20 ¹⁰⁹
26.4	48.72 ²⁷	51.64 ²³⁹	28.974 ²¹¹	43.56 ²¹⁰	11.702 ¹³²	51.85 ¹³⁵
Nov. 5.4	49.09 ³⁷	49.58 ²⁰⁶	29.268 ²⁹⁴	41.81 ¹⁷⁵	11.878 ¹⁷⁶	50.26 ¹⁵⁹
15.4	49.56 ⁴⁷	47.96 ¹⁶²	29.638 ³⁷⁰	40.50 ¹³¹	12.099 ²²¹	48.44 ¹⁸²
25.4	50.12 ⁵⁶	46.84 ¹¹²	30.075 ⁴³⁷	39.68 ⁸²	12.358 ²⁵⁹	46.43 ²⁰¹
Dec. 5.3	50.75 ⁶³	46.29 ⁵⁵	30.567 ⁴⁹²	39.40 ²⁸	12.651 ²⁹³	44.28 ²¹⁵
15.3	51.42 ⁶⁷	46.34 ⁵	31.097 ⁵³⁰	39.70 ³⁰	12.968 ³¹⁷	42.04 ²²⁴
25.3	52.12 ⁷⁰	46.99 ⁶⁵	31.648 ⁵⁵¹	40.57 ⁸⁷	13.303 ³³⁵	39.79 ²²⁵
35.2	52.83 ⁷¹	48.23 ¹²⁴	32.202 ⁵⁵⁴	41.99 ¹⁴²	13.642 ³³⁹	37.59 ²²⁰
Mean Place	50.734	51.06	30.059	43.24	11.352	56.17
Sec δ , Tan δ	2.637	-2.440	1.958	-1.684	1.002	+0.069
L α , L δ	+0.01	-0.4	+0.01	-0.4	0.00	-0.4
ω α , ω δ	-0.16	-0.2	-0.11	-0.2	+0.01	-0.2
Authority and Catalogue No.	A. N.	773	A. E.	775		776

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	31 Comæ.		ψ Virginis.		ε Ursæ Majoris.	
	5.07	G 0	4.91	M b	1.68	A o p
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
Mean Solar Date						
	^h 12 ^m 48	^o 27 ['] 55	^h 12 ^m 50	^o 9 ['] 08	^h 12 ^m 50	^o 56 ['] 20
Jan. 1.3	10.555 ³⁶⁵	51.12 ¹⁸⁸	35.197 ³³⁷	45.58 ²¹⁶	51.112 ⁵¹⁶	50.08 ¹³⁷
11.2	10.023 ³⁵⁵	49.24 ¹⁴⁸	35.534 ³²⁶	47.74 ²¹⁴	51.628 ⁵⁰⁸	48.71 ⁷⁷
21.2	11.278 ³³⁴	47.76 ¹⁰³	35.860 ³⁰⁵	49.88 ²⁰⁷	52.136 ⁴⁸³	47.94 ¹⁴
31.2	11.612	46.73	36.165	51.95	52.619	47.80
Feb. 10.1	11.917 ³⁰⁵	46.16 ⁵⁷	36.443 ²⁷⁸	53.88 ¹⁹³	53.063 ⁴⁴⁴	48.27 ⁴⁷
20.1	12.186 ²⁶¹	46.06 ¹⁰	36.686 ²⁴³	55.64 ¹⁷⁶	53.455 ³⁹²	49.31 ¹⁰⁴
Mar. 1.1	12.413 ²²⁷	46.39 ³³	36.893 ²⁰⁷	57.17 ¹⁵³	53.785 ³³⁰	50.88 ¹⁵⁷
11.1	12.595 ¹⁸²	47.13 ⁷⁴	37.062 ¹⁶⁹	58.48 ¹³¹	54.046 ²⁶¹	52.88 ²⁰⁰
21.0	12.732 ¹⁵⁷	48.21 ¹⁰⁸	37.192 ¹³⁰	59.55 ¹⁰⁷	54.235 ¹⁸⁹	55.22 ²³⁴
31.0	12.826 ⁹⁴	49.55 ¹³⁴	37.286 ⁹⁴	60.37 ⁸²	54.351 ¹¹⁶	57.79 ²⁵⁷
Apr. 10.0	12.878 ⁵²	51.10 ¹⁵⁵	37.347 ⁶¹	60.98 ⁶¹	54.397 ⁴⁶	60.49 ²⁷⁰
20.0	12.893 ¹⁵	52.75 ¹⁶⁵	37.377 ³⁰	61.38 ⁴⁰	54.377 ²⁰	63.19 ²⁷⁰
20.9	12.876 ¹⁷	54.45 ¹⁷⁰	37.381 ⁴	61.59 ²¹	54.299 ⁷⁸	65.80 ²⁶¹
May 9.9	12.831 ⁴⁵	56.12 ¹⁶⁷	37.360 ²¹	61.63 ⁴	54.170 ¹²⁹	68.22 ²⁴²
19.9	12.762 ⁶⁰	57.68 ¹⁵⁶	37.320 ⁴⁰	61.53 ¹⁰	53.998 ¹⁷²	70.36 ²¹⁴
29.8	12.674 ⁸⁸	59.09 ¹⁴¹	37.262 ⁵⁸	61.30 ²³	53.790 ²⁰⁸	72.15 ¹⁷⁹
June 8.8	12.571 ¹⁴³	60.30 ¹²¹	37.189 ⁷³	60.96 ³⁴	53.556 ²³⁴	73.55 ¹⁴⁰
18.8	12.456 ¹¹²	61.28 ⁹⁶	37.103 ⁸⁶	60.51 ⁴⁵	53.303 ²⁵³	74.52 ⁹⁷
28.8	12.334 ¹²²	62.00 ⁷²	37.009 ⁹⁴	60.00 ⁵¹	53.039 ²⁶⁴	75.02 ⁵⁰
July 8.7	12.208 ¹²⁶	62.42 ⁴²	36.927 ¹⁰²	59.42 ⁵⁸	52.772 ²⁶⁷	75.03 ¹¹
18.7	12.082 ¹²⁸	62.55 ¹³	36.802 ¹⁰⁵	58.81 ⁶¹	52.509 ²⁶³	74.56 ⁴⁷
28.7	11.956 ¹²⁴	62.37 ¹⁸	36.697 ¹⁰⁵	58.16 ⁶⁵	52.256 ²⁵³	73.61 ⁹⁵
Aug 7.7	11.830 ¹¹⁶	61.89 ⁴⁸	36.597 ¹⁰⁰	57.51 ⁶⁵	52.020 ²³⁶	72.20 ¹⁴¹
17.6	11.737 ¹⁰³	61.10 ⁷⁹	36.506 ⁹¹	56.89 ⁶²	51.809 ²¹¹	70.36 ¹⁸⁴
27.6	11.652 ⁸⁵	59.99 ¹¹¹	36.430 ⁷⁶	56.33 ⁵⁶	51.630 ¹⁷⁹	68.12 ²²⁴
Sept. 6.6	11.586 ⁶³	58.59 ¹⁴⁰	36.374 ⁵⁶	55.87 ⁴⁶	51.489 ¹⁴¹	65.51 ²⁶¹
16.5	11.557 ³⁰	56.90 ¹⁶⁰	36.346 ²⁸	55.53 ³⁴	51.395 ⁹⁴	62.58 ²⁹³
26.5	11.554 ¹	54.95 ¹⁹⁵	36.350 ⁴	55.36 ¹⁷	51.353 ⁴²	59.38 ³²⁰
Oct. 6.5	11.594 ⁴⁰	52.73 ²²²	36.392 ⁴²	55.41 ⁵	51.371 ¹⁸	55.98 ³⁴⁰
16.5	11.677 ⁸³	50.29 ²⁴⁴	36.477 ⁸⁵	55.70 ²⁹	51.453 ⁸²	52.42 ³⁵⁶
26.4	11.807 ¹³⁰	47.67 ²⁶²	36.606 ¹²⁹	56.26 ⁵⁶	51.603 ¹⁵⁰	48.78 ³⁶⁴
Nov. 5.4	11.985 ¹⁷⁵	44.92 ²⁷⁵	36.782 ¹⁷⁶	57.12 ⁸⁶	51.822 ²¹⁹	45.15 ³⁶³
15.4	12.211 ²²⁶	42.08 ²⁸⁴	37.001 ²¹⁹	58.26 ¹¹⁴	52.111 ²⁸⁹	41.60 ³⁵⁵
25.4	12.470 ²⁶⁸	39.23 ²⁸⁵	37.261 ²⁶⁰	59.69 ¹⁴⁷	52.466 ³⁵⁵	38.24 ³³⁶
Dec. 5.3	12.786 ³⁰⁷	37.45 ²⁷⁸	37.555 ²⁹⁴	61.37 ¹⁶⁸	52.878 ⁴¹²	35.16 ³⁰⁸
15.3	13.124 ³³⁸	33.81 ²⁶⁴	37.875 ³²⁰	63.27 ¹⁹⁰	53.337 ⁴⁵⁹	32.44 ²⁷²
25.3	13.482 ³⁵⁸	31.39 ²⁴²	38.211 ³³⁶	65.32 ²⁰⁵	53.832 ⁴⁹⁵	30.17 ²²⁷
35.2	13.850 ³⁶⁸	29.28 ²¹¹	38.553 ³⁴²	67.47 ²¹⁵	54.346 ⁵¹⁴	28.43 ¹⁷⁴
Mean Place	11.545	55.82	36.321	53.50	51.988	61.77
Sec δ, Tan δ	1.132	-0.530	1.013	-0.161	1.805	+1.502
L α, L δ	0.00	-0.4	0.00	-0.4	-0.01	-0.4
ω α, ω δ	0.03	-0.2	-0.01	-0.2	+0.10	-0.2
Authenticity and Catalue No.	778		781		A. E.	782

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Virginis.		ι^2 Canum Venat.		ϵ Virginis.	
	3.66	Ma	2.90	A o p	2.95	K o
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
Mean Solar Date.						
	^h ^m 12 51	^o ['] 3 46	^h ^m 12 52	^o ['] 38 41	^h ^m 12 58	^o ['] 11 20
Jan. 1.3	57.415 ^s	81.76	38.740 ^s	76.83	34.404 ^s	45.69
11.2	57.749 ³³⁴	79.62 ²¹⁴	39.137 ³⁹⁷	75.10 ¹⁷³	34.743 ³³⁹	43.58 ²¹¹
21.2	58.073 ³²⁴	77.64 ¹⁹⁸	39.526 ³⁸⁹	73.85 ¹²⁵	35.073 ³³⁰	41.71 ¹⁸⁷
31.2	58.378 ³⁰⁵	75.88 ¹⁷⁶	39.896 ³⁷⁰	73.13 ⁷²	35.386 ³¹³	40.14 ¹⁵⁷
Feb. 10.1	58.656 ²⁷⁸	74.38 ¹⁵⁰	40.234 ³³⁸	72.95 ¹⁸	35.672 ²⁸⁶	38.89 ¹²⁵
20.1	58.901 ²⁴⁵	73.17 ¹²¹	40.533 ²⁹⁹	73.29 ³⁴	35.926 ²⁵⁴	38.00 ⁸⁹
Mar. 1.1	59.108 ²⁰⁷	72.27 ⁹⁰	40.786 ²⁵³	74.11 ⁸²	36.143 ²¹⁷	37.47 ⁵³
11.1	59.277 ¹⁶⁹	71.67 ⁶⁰	40.990 ²⁰⁴	75.36 ¹²⁵	36.321 ¹⁷⁸	37.28 ¹⁹
21.0	59.408 ¹³¹	71.37 ³⁰	41.142 ¹⁵²	76.97 ¹⁶¹	36.459 ¹³⁸	37.42 ¹⁴
31.0	59.502 ⁹⁴	71.33 ⁴	41.244 ¹⁰²	78.85 ¹⁸⁸	36.560 ¹⁰¹	37.83 ⁴¹
Apr. 10.0	59.561 ⁵⁹	71.51 ¹⁸	41.298 ⁵⁴	80.91 ²⁰⁶	36.626 ⁶⁶	38.47 ⁶⁴
20.0	59.589 ²⁸	71.88 ³⁷	41.309 ¹¹	83.05 ²¹⁴	36.659 ³³	39.28 ⁸¹
29.9	59.591 ²	72.39 ⁵¹	41.281 ²⁸	85.19 ²¹⁴	36.664 ⁵	40.21 ⁹³
May 9.9	59.569 ²²	73.01 ⁶²	41.219 ⁶²	87.23 ²⁰⁴	36.644 ²⁰	41.22 ¹⁰¹
19.9	59.526 ⁴³	73.70 ⁶⁹	41.129 ⁹⁰	89.11 ¹⁸⁸	36.602 ⁴²	42.24 ¹⁰²
29.8	59.467 ⁵⁹	74.42 ⁷²	41.015 ¹¹⁴	90.76 ¹⁶⁵	36.542 ⁶⁰	43.24 ¹⁰⁰
June 8.8	59.393 ⁷⁴	75.15 ⁷³	40.883 ¹³²	92.13 ¹³⁷	36.467 ⁷⁵	44.18 ⁹⁴
18.8	59.308 ⁸⁵	75.86 ⁷¹	40.737 ¹⁴⁶	93.18 ¹⁰⁵	36.379 ⁸⁸	45.02 ⁸⁴
28.8	59.213 ⁹⁵	76.51 ⁶⁵	40.583 ¹⁵⁴	93.87 ⁶⁹	36.282 ⁹⁷	45.75 ⁷³
July 8.7	59.113 ¹⁰⁰	77.10 ⁵⁹	40.423 ¹⁶⁰	94.20 ³³	36.178 ¹⁰⁴	46.34 ⁵⁹
18.7	59.010 ¹⁰³	77.61 ⁵¹	40.264 ¹⁵⁹	94.14 ⁶	36.071 ¹⁰⁷	46.78 ⁴⁴
28.7	58.908 ¹⁰²	78.02 ⁴¹	40.110 ¹⁵⁴	93.70 ⁴⁴	35.963 ¹⁰⁸	47.04 ²⁶
Aug. 7.7	58.810 ⁹⁸	78.31 ²⁹	39.965 ¹⁴⁵	92.88 ⁸²	35.860 ¹⁰³	47.12 ⁸
17.6	58.721 ⁸⁹	78.47 ¹⁶	39.834 ¹³¹	91.69 ¹¹⁹	35.765 ⁹⁵	47.01 ¹¹
27.6	58.647 ⁷⁴	78.47 [—]	39.724 ¹¹⁰	90.14 ¹⁵⁵	35.685 ⁸⁰	46.68 ³³
Sept. 6.6	58.593 ⁵⁴	78.29 ¹⁸	39.640 ⁸⁴	88.25 ¹⁸⁹	35.624 ⁶¹	46.13 ⁵⁵
16.5	58.564 ²⁹	77.91 ³⁸	39.587 ⁵³	86.05 ²²⁰	35.587 ³⁷	45.35 ⁷⁸
26.5	58.566 ²	77.31 ⁶⁰	39.572 ¹⁵	83.57 ²⁴⁸	35.582 ⁵	44.32 ¹⁰³
Oct. 6.5	58.605 ³⁹	76.48 ⁸³	39.601 ²⁹	80.83 ²⁷⁴	35.614 ³²	43.04 ¹²⁸
16.5	58.685 ⁸⁰	75.40 ¹⁰⁸	39.678 ⁷⁷	77.90 ²⁹³	35.686 ⁷²	41.52 ¹⁵²
26.4	58.809 ¹²⁴	74.07 ¹³³	39.806 ¹²⁸	74.82 ³⁰⁸	35.803 ¹¹⁷	39.76 ¹⁷⁶
Nov. 5.4	58.977 ¹⁶⁸	72.49 ¹⁵⁸	39.987 ¹⁸¹	71.64 ³¹⁸	35.965 ¹⁶²	37.78 ¹⁹⁸
15.4	59.189 ²¹²	70.69 ¹⁸⁰	40.220 ²³³	68.45 ³¹⁹	36.172 ²⁰⁷	35.62 ²¹⁶
25.4	59.442 ²⁵³	68.69 ²⁰⁰	40.503 ²⁸³	65.32 ³¹³	36.420 ²⁴⁸	33.31 ²³¹
Dec. 5.3	59.729 ²⁸⁷	66.55 ²¹⁴	40.829 ³²⁶	62.34 ²⁹⁸	36.704 ²⁸⁴	30.92 ²³⁹
15.3	60.043 ³¹⁴	64.31 ²²⁴	41.190 ³⁶¹	59.60 ²⁷⁴	37.017 ³¹³	28.51 ²⁴¹
25.3	60.374 ³³¹	62.05 ²²⁶	41.575 ³⁸⁵	57.17 ²⁴³	37.350 ³³³	26.15 ²³⁶
35.2	60.712 ³³⁸	59.83 ²²²	41.973 ³⁹⁸	55.13 ²⁰⁴	37.691 ³⁴¹	23.91 ²²⁴
Mean Place	58.502	78.45	39.715	84.63	35.505	45.10
Sec δ , Tan δ	1.002	+0.066	1.281	+0.801	1.020	+0.201
L α , L δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω , α , ω δ	0.00	-0.2	+0.05	-0.2	+0.01	-0.2
Authority and Catalogue No.	A. E.	784	A. E.	786	A. E.	788

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	θ Virginis.		γ Hydræ.		ε Centauri.	
	4.46	A 0	3.33	G 5	2.91	A 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 13 06	^m 5 09	^h 13 14	^m 22 47	^h 13 16	^m 36 19
Jan. 1.3	11.942 ^s	11.47 ^s	58.791 ^s	19.58 ^s	31.067 ^s	42.06 ^s
11.2	12.278 ³³⁶	13.61 ²¹⁴	59.146 ³⁵⁵	21.56 ¹⁹⁸	31.458 ³⁹¹	43.83 ¹⁷⁷
21.2	12.606 ³²⁸	15.69 ²⁰⁸	59.494 ³⁴⁸	23.67 ²¹¹	31.840 ³⁸²	45.88 ²⁰⁵
31.2	12.917 ³¹¹	17.66 ¹⁹⁷	59.824 ³³⁰	25.87 ²²⁰	32.203 ³⁶³	48.15 ²²⁷
Feb. 10.2	13.202 ²⁸⁵	19.46 ¹⁸⁰	60.129 ³⁰⁵	28.08 ²²¹	32.538 ³³⁵	50.57 ²⁴²
20.1	13.456 ²⁵⁴	21.04 ¹⁵⁸	60.402 ²⁷³	30.25 ²¹⁷	32.839 ³⁰¹	53.09 ²⁵²
Mar. 1.1	13.675 ²¹⁹	22.38 ¹³⁴	60.639 ²³⁷	32.33 ²⁰⁸	33.100 ²⁶¹	55.63 ²⁵⁴
11.1	13.857 ¹⁸²	23.46 ¹⁰⁸	60.839 ²⁰⁰	34.27 ¹⁹⁴	33.320 ²²⁰	58.14 ²⁵¹
21.1	14.003 ¹⁴⁶	24.29 ⁸³	61.001 ¹⁶²	36.05 ¹⁷⁸	33.497 ¹⁷⁷	60.57 ²⁴³
31.0	14.113 ¹¹⁰	24.87 ⁵⁸	61.126 ¹²⁵	37.65 ¹⁶⁰	33.634 ¹³⁷	62.88 ²³¹
Apr. 10.0	14.189 ⁷⁶	25.22 ³⁵	61.216 ⁹⁰	39.06 ¹⁴¹	33.732 ⁹⁸	65.03 ²¹⁵
20.0	14.234 ⁴⁵	25.37 ¹⁵	61.273 ⁵⁷	40.26 ¹²⁰	33.792 ⁶⁰	67.01 ¹⁹⁸
29.9	14.252 ¹⁸¹	25.34 ³	61.301 ²⁸	41.26 ¹⁰⁰	33.818 ²⁶	68.78 ¹⁷⁷
May 9.9	14.245 ⁷	25.17 ¹⁷	61.301 [—]	42.06 ⁸⁰	33.811 ⁷	70.32 ¹⁵⁴
19.9	14.216 ²⁹	24.87 ³⁰	61.277 ²⁴	42.66 ⁶⁰	33.775 ³⁶	71.61 ¹²⁹
29.9	14.169 ⁴⁷	24.48 ³⁹	61.230 ⁴⁷	43.05 ³⁹	33.712 ⁶³	72.64 ¹⁰³
June 8.8	14.105 ⁶⁴	24.02 ⁴⁶	61.163 ⁶⁷	43.25 ²⁰	33.625 ⁸⁷	73.39 ⁷⁵
18.8	14.027 ⁷⁸	23.50 ⁵²	61.078 ⁸⁵	43.26 ¹	33.515 ¹¹⁰	73.85 ⁴⁶
28.8	13.937 ⁹⁰	22.95 ⁵⁵	60.978 ¹⁰⁰	43.08 ¹⁸	33.387 ¹²⁸	74.02 ¹⁷
July 8.8	13.838 ⁹⁰	22.37 ⁵⁸	60.865 ¹¹³	42.71 ³⁷	33.243 ¹⁴⁴	73.90 ¹²
18.7	13.734 ¹⁰⁴	21.80 ⁵⁷	60.744 ¹²¹	42.18 ⁵³	33.089 ¹⁵⁴	73.48 ⁴²
28.7	13.627 ¹⁰⁷	21.25 ⁵⁵	60.618 ¹²⁶	41.50 ⁶⁸	32.930 ¹⁵⁹	72.78 ⁷⁰
Aug 7.7	13.528 ¹⁰⁵	20.73 ⁵²	60.493 ¹²⁵	40.68 ⁸²	32.772 ¹⁵⁸	71.83 ⁹⁵
17.6	13.425 ⁹⁷	20.28 ⁴⁵	60.375 ¹¹⁸	39.76 ⁹²	32.622 ¹⁵⁰	70.65 ¹¹⁸
27.6	13.340 ⁸⁵	19.91 ³⁷	60.270 ¹⁰⁵	38.78 ⁹⁸	32.487 ¹³⁵	69.30 ¹³⁵
Sept. 6.6	13.273 ⁶⁷	19.65 ²⁶	60.184 ⁸⁶	37.77 ¹⁰¹	32.376 ¹¹¹	67.81 ¹⁴⁹
16.6	13.232 ⁴¹	19.54 ¹¹	60.126 ⁵⁸	36.80 ⁹⁷	32.298 ⁷⁸	66.25 ¹⁵⁶
26.5	13.221 ¹¹	19.62 ⁸	60.102 ²⁴	35.91 ⁸⁹	32.260 ³⁸	64.70 ¹⁵⁵
Oct. 6.5	13.247 ²⁶	19.91 ²⁹	60.119 ¹⁷	35.16 ⁷⁵	32.269 ⁹	63.23 ¹⁴⁷
16.5	13.315 ⁶⁸	20.43 ⁵²	60.181 ⁶²	34.60 ⁵⁶	32.331 ⁶²	61.91 ¹³²
26.5	13.428 ¹¹³	21.21 ⁷⁸	60.292 ¹¹¹	34.30 ³⁰	32.449 ¹¹⁸	60.82 ¹⁰⁹
Nov. 5.4	13.586 ¹⁵⁸	22.27 ¹⁰⁶	60.455 ¹⁶³	34.30 [—]	32.625 ¹⁷⁶	60.02 ⁸⁰
15.4	13.790 ²⁰⁴	23.60 ¹³³	60.666 ²¹¹	34.62 ³²	32.856 ²³¹	59.59 ⁴³
25.4	14.036 ²⁴⁶	25.17 ¹⁵⁷	60.923 ²⁵⁷	35.28 ⁶⁶	33.139 ²⁸³	59.54 ⁵
Dec. 5.3	14.318 ²⁸²	26.97 ¹⁸⁰	61.220 ²⁹⁷	36.29 ¹⁰¹	33.465 ³²⁶	59.92 ³⁸
15.3	14.629 ³¹¹	28.95 ¹⁹⁸	61.548 ³²⁸	37.62 ¹³³	33.826 ³⁶¹	60.72 ⁸⁰
25.3	14.959 ³³⁰	31.05 ²¹⁰	61.896 ³⁴⁸	39.24 ¹⁶²	34.210 ³⁸⁴	61.92 ¹²⁰
35.3	15.298 ³³⁹	33.20 ²¹⁵	62.255 ³⁵⁹	41.11 ¹⁸⁷	34.604 ³⁹⁴	63.49 ¹⁵⁷
Mean Place	13.147	17.75	60.145	31.80	32.546	58.52
Sec δ, Tan δ	1.004	—0.090	1.085	—0.420	1.241	—0.735
L α, L δ	0.00	—0.4	0.00	—0.4	+0.01	—0.4
ω α, ω δ	—0.01	—0.3	—0.03	—0.3	—0.05	—0.3
Authority and Catalogue No.	A. E.	792	A. E.	802	A. E.	803

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ζ ¹ Ursæ Majoris.		α Virginis.		ι Virginis.	
	2.40	A 2 p	1.21	B 2	5.59	K 2
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 13 21	^m 55 17	^h 13 21	^m 10 47	^h 13 22	^m 12 19
Jan. 1.3	00.621	51.65	22.464	01.54	53.358	52.09
11.3	01.116 495	49.91 174	22.803 339	03.61 207	53.698 340	54.14 205
21.2	01.613 497	48.75 116	23.137 334	05.70 209	54.033 335	56.22 208
31.2	02.096 483	48.22 53	23.456 319	07.73 203	54.353 320	58.27 205
Feb. 10.2	02.550 454	48.32 10	23.751 295	09.65 192	54.650 297	60.22 195
20.1	02.962 412	49.03 71	24.017 266	11.42 177	54.918 268	62.04 182
Mar. 1.1	03.320 358	50.30 127	24.250 233	13.00 158	55.153 235	63.67 163
11.1	03.617 297	52.06 176	24.448 198	14.35 135	55.352 199	65.10 143
21.1	03.848 231	54.23 217	24.609 161	15.48 113	55.516 164	66.31 121
31.0	04.010 162	56.70 247	24.735 126	16.38 90	55.644 128	67.30 99
Apr. 10.0	04.105 95	59.36 266	24.828 93	17.06 68	55.739 95	68.07 77
20.0	04.136 31	62.11 275	24.890 62	17.53 47	55.803 64	68.64 57
30.0	04.107 29	64.83 272	24.924 34	17.83 30	55.838 35	69.03 39
May 9.9	04.023 84	67.41 258	24.932 8	17.96 13	55.847 9	69.25 22
19.9	03.891 132	69.78 237	24.916 16	17.94 2	55.832 15	69.30 5
29.9	03.719 172	71.85 207	24.879 37	17.79 15	55.797 35	69.23 7
June 8.8	03.514 205	73.56 171	24.823 56	17.54 25	55.741 56	69.04 19
18.8	03.282 232	74.85 129	24.750 73	17.19 35	55.668 73	68.74 30
28.8	03.031 251	75.70 85	24.662 88	16.76 43	55.580 88	68.35 39
July 8.8	02.767 264	76.08 38	24.563 99	16.26 50	55.480 100	67.87 48
18.7	02.499 268	75.97 11	24.456 107	15.71 55	55.370 110	67.32 55
28.7	02.233 266	75.38 59	24.343 113	15.13 58	55.256 114	66.73 59
Aug. 7.7	01.976 257	74.31 107	24.229 114	14.53 60	55.140 116	66.10 63
17.7	01.736 240	72.78 153	24.121 108	13.93 60	55.029 111	65.47 63
27.6	01.520 216	70.82 196	24.023 98	13.37 56	54.929 100	64.87 60
Sept. 6.6	01.336 184	68.46 236	23.943 80	12.89 48	54.847 82	64.31 56
16.6	01.193 143	65.73 273	23.886 57	12.51 38	54.789 58	63.86 45
26.5	01.098 95	62.69 304	23.861 25	12.28 23	54.761 28	63.54 32
Oct. 6.5	01.059 39	59.38 331	23.873 12	12.22 6	54.771 10	63.40 14
16.5	01.082 23	55.87 351	23.926 53	12.39 17	54.824 53	63.47 7
26.5	01.172 90	52.22 365	24.026 100	12.81 42	54.922 98	63.80 33
Nov. 5.4	01.333 161	48.52 370	24.172 146	13.51 70	55.069 147	64.40 60
15.4	01.564 231	44.85 367	24.366 194	14.49 98	55.263 194	65.29 89
25.4	01.864 300	41.30 355	24.604 238	15.75 126	55.501 238	66.46 117
Dec. 5.4	02.226 362	37.98 332	24.881 277	17.27 152	55.778 277	67.91 145
15.3	02.643 417	34.97 301	25.189 308	19.01 174	56.086 308	69.59 168
25.3	03.102 459	32.37 260	25.518 329	20.93 192	56.417 331	71.46 187
35.3	03.589 487	30.27 210	25.859 341	22.97 204	56.758 341	73.47 201
Mean Place	01.741	63.30	23.788	09.53	54.700	60.58
Sec δ, Tan δ	1.757	+1.444	1.018	-0.191	1.024	-0.219
L α, L δ	-0.01	-0.4	0.00	-0.4	0.00	-0.4
ω α, ω δ	+0.09	-0.3	-0.01	-0.3	-0.01	-0.4
Authority and Catalogue No.	A. E.	805	A. E.	806		807

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ζ Virginis. 3.44 A 2		ϵ Centauri. 2.56 B 1		m Virginis. 5.16 M a	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
Mean Solar Date.	^h 13 30	^m 0 13	^h 13 35	^m 53 05	^h 13 37	^m 8 20
Jan. 1.3	59.987 ³³³	37.85 ²¹⁴	16.874 ⁴⁹²	42.41 ¹²²	48.369 ³³⁵	17.95 ²⁰⁵
11.3	60.320 ³³⁰	39.99 ²⁰³	17.366 ⁴⁸⁶	43.63 ¹⁶⁵	48.704 ³³⁴	20.00 ²⁰³
21.2	60.650 ³¹⁷	42.02 ¹⁸⁷	17.852 ⁴⁶⁷	45.28 ²⁰⁴	49.038 ³²²	22.03 ¹⁹⁷
31.2	60.967 ²⁰⁶	43.89 ¹⁶⁵	18.319 ⁴³⁷	47.32 ²³⁶	49.360 ³⁰¹	24.00 ¹⁸³
Feb. 10.2	61.263 ²⁶⁹	45.54 ¹⁴⁰	18.756 ³⁹⁸	49.68 ²⁶¹	49.661 ²⁷⁵	25.83 ¹⁶⁵
20.2	61.532 ²³⁸	46.94 ¹¹¹	19.154 ³⁵³	52.29 ²⁸⁰	49.936 ²⁴⁴	27.48 ¹⁴⁴
Mar 1.1	61.770 ²⁰³	48.05 ⁸²	19.507 ³⁰³	55.09 ²⁹¹	50.180 ²¹⁰	28.92 ¹²¹
11.1	61.973 ¹⁶⁷	48.87 ⁵⁴	19.810 ²⁵¹	58.00 ²⁹⁸	50.390 ¹⁷⁶	30.13 ⁹⁷
21.1	62.140 ¹³³	49.41 ²⁷	20.061 ¹⁹⁹	60.98 ²⁹⁷	50.566 ¹⁴²	31.10 ⁷⁴
31.0	62.273 ¹⁰⁰	49.68 ³	20.260 ¹⁴⁸	63.95 ²⁹⁰	50.708 ¹¹⁰	31.84 ⁵²
Apr. 10.0	62.373 ⁶⁹	49.71 ¹⁷	20.408 ⁹⁷	66.85 ²⁷⁹	50.818 ⁷⁷	32.36 ³⁰
20.0	62.442 ⁴⁰	49.54 ³⁴	20.505 ⁴⁸	69.64 ²⁶²	50.895 ⁵⁰	32.66 ¹⁴
30.0	62.482 ¹³	49.20 ⁴⁷	20.553 ¹	72.26 ²⁴²	50.945 ²³	32.80 ²
May 9.9	62.495 ¹⁰	48.73 ⁵⁶	20.554 ⁴³	74.68 ²¹⁷	50.968 ²	32.78 ¹⁵
19.9	62.485 ³²	48.17 ⁶²	20.511 ⁸⁵	76.85 ¹⁸⁷	50.966 ²⁴	32.63 ²⁶
29.9	62.453 ⁵¹	47.55 ⁶⁵	20.426 ¹²⁵	78.72 ¹⁵⁵	50.942 ⁴⁵	32.37 ³⁴
June 8.9	62.402 ⁶⁸	46.90 ⁶⁶	20.301 ¹⁶¹	80.27 ¹¹⁹	50.897 ⁶⁵	32.03 ⁴¹
18.8	62.334 ⁸³	46.24 ⁶⁴	20.140 ¹⁹¹	81.46 ⁸¹	50.832 ⁸¹	31.62 ⁴⁷
28.8	62.251 ⁹⁶	45.60 ⁶¹	19.949 ²¹⁷	82.27 ⁴¹	50.751 ⁹⁵	31.15 ⁵¹
July 8.8	62.155 ¹⁰⁵	44.99 ⁵⁵	19.732 ²³⁷	82.68 ⁴¹	50.656 ¹⁰⁶	30.64 ⁵³
18.7	62.050 ¹¹²	44.44 ⁴⁸	19.495 ²⁴⁷	82.68 ⁸²	50.550 ¹¹⁴	30.11 ⁵⁴
28.7	61.938 ¹¹³	43.96 ⁴⁰	19.248 ²⁴⁹	82.27 ¹¹⁸	50.436 ¹¹⁷	29.57 ⁵³
Aug. 7.7	61.825 ¹⁰⁹	43.56 ²⁹	18.999 ²⁴¹	81.45 ¹⁵²	50.319 ¹¹⁵	29.04 ⁵⁰
17.7	61.716 ¹⁰¹	43.27 ¹⁶	18.758 ²²³	80.27 ¹⁷⁹	50.204 ¹⁰⁶	28.54 ⁴⁴
27.6	61.615 ⁸⁵	43.11 ²	18.535 ¹⁹¹	78.75 ²⁰⁰	50.098 ⁹²	28.10 ³⁶
Sept. 6.6	61.520 ⁹³	43.09 ¹⁶	18.344 ¹⁵⁰	76.96 ²¹⁴	50.006 ⁶⁹	27.74 ²⁴
16.6	61.467 ³⁴	43.25 ³⁵	18.194 ⁹⁶	74.96 ²¹⁷	49.937 ⁴⁰	27.50 ⁹
26.6	61.433 ¹	43.60 ⁵⁷	18.098 ³⁴	72.82 ²¹³	49.897 ³⁷	27.41 ³¹
Oct. 6.5	61.434 ⁴¹	44.17 ⁸⁰	18.064 ³⁶	70.65 ¹⁹⁸	49.892 ⁸²	27.50 ⁵⁵
16.5	61.475 ⁸⁶	44.97 ¹⁰⁶	18.100 ¹¹²	68.52 ¹⁷⁴	49.929 ¹³⁰	27.81 ⁸¹
26.5	61.561 ¹³²	46.03 ¹³⁰	18.212 ¹⁸⁹	66.54 ¹⁴¹	50.011 ¹⁷⁹	28.36 ¹³⁴
Nov. 5.4	61.693 ¹⁷⁹	47.33 ¹⁵⁵	18.401 ²⁶³	64.80 ¹⁰⁰	50.141 ²²²	29.17 ¹⁵⁸
15.4	61.872 ²²⁴	48.88 ¹⁷⁷	18.664 ³³²	63.39 ⁵⁶	50.320 ²⁹⁶	30.25 ¹⁷⁸
25.4	62.096 ²⁶³	50.65 ¹⁹⁶	18.996 ³⁹¹	62.39 ⁶	50.542 ³²¹	31.59 ²⁰³
Dec. 5.4	62.359 ²⁹⁵	52.61 ²⁰⁹	19.387 ⁴³⁹	61.83 ⁴³	50.806 ³³⁵	33.17 ¹⁹⁴
15.3	62.654 ³¹⁹	54.70 ²¹⁷	19.826 ⁴⁹²	61.77 ⁹³	51.102 ³³⁵	34.95 ²⁰³
25.3	62.073 ³³²	56.87 ²¹⁷	20.299 ⁴⁷³	62.20 ⁴³	51.423 ³³⁵	36.89 ²⁰³
35.3	63.305 ³³²	50.04 ²¹⁷	20.791 ⁴⁹²	63.13 ⁹³	51.758 ³³⁵	38.92 ²⁰³
Mean Place	61.316	41.99	18.819	62.72	49.779	24.75
Sec δ , Tan δ	1.000	-0.004	1.666	-1.332	1.011	-0.147
L a, L δ	0.00	-0.4	+0.01	-0.4	0.00	-0.4
ω a, ω δ	0.00	-0.4	-0.08	-0.4	-0.01	-0.4
Authority and Catalogue No.	A. E.	814	A. E.	819		821

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	τ Bootis.		η Ursæ Majoris.		μ Centauri.	
	4.51.	F 5	1.91	B 3	3.32	B 2 p
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 13 43	^o 17 48	^h 13 44	^o 49 39	^h 13 45	^o 42 06
Jan., 1.3	49.051 ^s	52.07 ["]	40.986 ^s	69.37 ["]	14.435 ^s	39.15 ["]
11.3	49.390 ³³⁹	49.84 ²²³	41.424 ⁴³⁸	67.28 ²⁰⁹	14.852 ⁴¹⁷	40.51 ¹³⁶
21.2	49.729 ³³⁹	47.89 ¹⁹⁵	41.870 ⁴⁴⁶	65.74 ¹⁵⁴	15.266 ⁴¹⁴	42.22 ¹⁷¹
31.2	50.059 ³³⁰	46.29 ¹⁶⁰	42.309 ⁴³⁹	64.80 ⁹⁴	15.667 ⁴⁰¹	44.22 ²⁰⁰
Feb. 10.2	50.371 ³¹²	45.09 ¹²⁰	42.728 ⁴¹⁹	64.48 ³²	16.044 ³⁷⁷	46.45 ²²³
20.2	50.657 ²⁸⁶	44.30 ⁷⁹	43.115 ³⁸⁷	64.76 ²⁸	16.390 ³⁴⁶	48.84 ²³⁹
Mar. 1.1.	50.912 ²⁵⁵	43.93 ³⁷	43.459 ³⁴⁴	65.63 ⁸⁷	16.700 ³¹⁰	51.33 ²⁴⁹
11.1	51.132 ²²⁰	43.97 ⁴	43.753 ²⁹⁴	67.03 ¹⁴⁰	16.969 ²⁶⁹	53.87 ²⁵⁴
21.1	51.316 ¹⁸⁴	44.39 ⁴²	43.993 ²⁴⁰	68.87 ¹⁸⁴	17.196 ²²⁷	56.40 ²⁵³
31.0	51.462 ¹⁴⁶	45.14 ⁷⁵	44.176 ¹⁸³	71.07 ²²⁰	17.382 ¹⁸⁶	58.88 ²⁴⁸
Apr. 10.0	51.572 ¹¹⁰	46.16 ¹⁰²	44.301 ¹²⁵	73.53 ²⁴⁶	17.526 ¹⁴⁴	61.26 ²³⁸
20.0	51.648 ⁷⁶	47.38 ¹²²	44.370 ⁶⁹	76.14 ²⁶¹	17.630 ¹⁰⁴	63.51 ²²⁵
30.0	51.692 ⁴⁴	48.74 ¹³⁶	44.386 ¹⁶	78.79 ²⁶⁵	17.694 ⁶⁴	65.59 ²⁰⁸
May 9.9	51.707 ¹⁵	50.17 ¹⁴³	44.353 ³³	81.38 ²⁵⁹	17.722 ²⁸	67.48 ¹⁸⁹
19.9	51.695 ¹²	51.60 ¹⁴³	44.275 ⁷⁸	83.83 ²⁴⁵	17.714 ⁸	69.15 ¹⁶⁷
29.9	51.658 ³⁷	52.99 ¹³⁹	44.159 ¹¹⁶	86.03 ²²⁰	17.672 ⁴²	70.57 ¹⁴²
June 8.9	51.600 ⁵⁸	54.28 ¹²⁹	44.010 ¹⁴⁹	87.94 ¹⁹¹	17.598 ⁷⁴	71.72 ¹¹⁵
18.8	51.523 ⁷⁷	55.43 ¹¹⁵	43.832 ¹⁷⁸	89.48 ¹⁵⁴	17.495 ¹⁰³	72.57 ⁸⁵
28.8	51.428 ⁹⁵	56.40 ⁹⁷	43.631 ²⁰¹	90.63 ¹¹⁵	17.366 ¹²⁹	73.11 ⁵⁴
July 8.8	51.320 ¹⁰⁸	57.18 ⁷⁸	43.413 ²¹⁸	91.34 ⁷¹	17.214 ¹⁵²	73.33 ²²
18.7	51.202 ¹¹⁸	57.73 ⁵⁵	43.184 ²²⁹	91.59 ²⁵	17.043 ¹⁷¹	73.23 ¹⁰
28.7	51.076 ¹²⁶	58.05 ³²	42.950 ²³⁴	91.89 ²⁰	16.861 ¹⁸²	72.81 ⁴²
Aug. 7.7	50.948 ¹²⁸	58.11 ⁶	42.717 ²³³	90.72 ⁶⁷	16.675 ¹⁸⁶	72.08 ⁷³
17.7	50.822 ¹²⁶	57.90 ²¹	42.493 ²²⁴	89.59 ¹¹³	16.491 ¹⁸⁴	71.06 ¹⁰²
27.6	50.704 ¹¹⁸	57.43 ⁴⁷	42.285 ²⁰⁸	88.02 ¹⁵⁷	16.319 ¹⁷²	69.79 ¹²⁷
Sept. 6.6	50.601 ¹⁰³	56.68 ⁷⁵	42.100 ¹⁸⁵	86.04 ¹⁹⁸	16.169 ¹⁵⁰	68.32 ¹⁴⁷
16.6	50.520 ⁸¹	55.65 ¹⁰³	41.947 ¹⁵³	83.66 ²³⁸	16.050 ¹¹⁹	66.70 ¹⁶²
26.6	50.466 ⁵⁴	54.34 ¹³¹	41.834 ¹¹³	80.94 ²⁷²	15.973 ⁷⁷	65.00 ¹⁷⁰
Oct. 6.5	50.447 ¹⁹	52.76 ¹⁵⁸	41.768 ⁶⁶	77.90 ³⁰⁴	15.944 ²⁹	63.31 ¹⁶⁹
16.5	50.468 ²¹	50.92 ¹⁸⁴	41.757 ¹¹	74.62 ³²⁸	15.972 ²⁸	61.70 ¹⁶¹
26.5	50.534 ⁶⁶	48.83 ²⁰⁹	41.806 ⁴⁹	71.15 ³⁴⁷	16.061 ⁸⁹	60.25 ¹⁴⁵
Nov. 5.4	50.649 ¹¹⁵	46.53 ²³⁰	41.919 ¹¹³	67.56 ³⁵⁹	16.213 ¹⁵²	59.04 ¹²¹
15.4	50.812 ¹⁶³	44.05 ²⁴⁸	42.097 ¹⁷⁸	63.92 ³⁶⁴	16.428 ²¹⁵	58.15 ⁸⁹
25.4	51.021 ²⁰⁹	41.45 ²⁶⁰	42.339 ²⁴²	60.34 ³⁵⁸	16.702 ²⁷⁴	57.62 ⁵³
Dec. 5.4	51.274 ²⁵³	38.78 ²⁶⁷	42.642 ³⁰³	56.91 ³⁴³	17.028 ³²⁶	57.49 ¹³
15.3	51.563 ²⁸⁹	36.13 ²⁶⁵	42.997 ³⁵⁵	53.72 ³¹⁹	17.396 ³⁶⁸	57.80 ³¹
25.3	51.880 ³¹⁷	33.56 ²⁵⁷	43.394 ³⁹⁷	50.87 ²⁸⁵	17.794 ³⁹⁸	58.53 ⁷³
35.3	52.214 ³³⁴	31.17 ²³⁹	43.821 ⁴²⁷	48.46 ²⁴¹	18.210 ⁴¹⁶	59.68 ¹¹⁵
Mean Place	50.383	54.16	42.280	79.95	16.243	56.35
Sec δ , Tan δ	1.050	+0.321	1.545	+1.178	1.348	-0.904
L α , L δ	0.00	-0.4	-0.01	-0.4	+0.01	-0.4
ω α , ω δ	+0.02	-0.4	+0.07	-0.4	-0.05	-0.4
Authority and Catalogue No.	A. E.	824	A. E.	826	A. N.	828

(12961)

(NAUTICAL ALMANAC, 1928)

2 B

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ζ Centauri.		η Bootis.		τ Virginis.	
	3.06	B 2 p	2.80	G o	4.34	A 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 13 51	^m 46 55	^h 13 51	^m 18 45	^h 13 57	^m 1 53
Jan. 1.3	00.307 ^s	45.76 ["]	13.944 ^s	26.34 ["]	57.310 ^s	35.39 ["]
11.3	00.752 ⁴⁴⁵	46.94 ¹¹⁸	14.283 ³³⁹	24.06 ²²⁸	57.638 ³²⁸	33.25 ²¹⁴
21.2	01.195 ⁴⁴³	48.51 ¹⁵⁷	14.623 ³⁴⁰	22.07 ¹⁹⁹	57.969 ³³¹	31.22 ²⁰³
31.2	01.625 ⁴³⁰	50.42 ¹⁹¹	14.956 ³³³	20.44 ¹⁶³	58.292 ³²³	29.38 ¹⁸⁴
Feb. 10.2	02.032 ⁴⁰⁷	52.61 ²¹⁹	15.272 ³¹⁶	19.22 ¹²²	58.599 ³⁰⁷	27.76 ¹⁶²
20.2	02.406 ³⁷⁴	55.01 ²⁴⁰	15.564 ²⁹²	18.42 ⁸⁰	58.883 ²⁸⁴	26.43 ¹³³
Mar. 1.1	02.743 ³³⁷	57.56 ²⁵⁵	15.826 ²⁶²	18.06 ³⁶	59.139 ²⁵⁶	25.40 ¹⁰³
11.1	03.038 ²⁹⁵	60.20 ²⁶⁴	16.054 ²²⁸	18.12 ⁶	59.364 ²²⁵	24.68 ⁷²
21.1	03.288 ²⁵⁰	62.87 ²⁶⁷	16.245 ¹⁹¹	18.56 ⁴⁴	59.556 ¹⁹²	24.26 ⁴²
31.1	03.493 ²⁰⁵	65.52 ²⁶⁵	16.399 ¹⁵⁴	19.34 ⁷⁸	59.715 ¹⁵⁹	24.12 ¹⁴
Apr. 10.0	03.653 ¹⁶⁰	68.11 ²⁵⁹	16.518 ¹¹⁹	20.39 ¹⁰⁵	59.841 ¹²⁶	24.23 ¹¹
20.0	03.770 ¹¹⁷	70.59 ²⁴⁸	16.602 ⁸⁴	21.66 ¹²⁷	59.936 ⁹⁵	24.56 ³³
30.0	03.844 ⁷⁴	72.92 ²³³	16.654 ⁵²	23.07 ¹⁴¹	60.002 ⁶⁶	25.06 ⁵⁰
May 9.9	03.877 ³³	75.06 ²¹⁴	16.675 ²¹	24.55 ¹⁴⁸	60.040 ³⁸	25.68 ⁶²
19.9	03.870 ⁷	76.99 ¹⁹³	16.668 ⁷	26.04 ¹⁴⁹	60.053 ¹³	26.40 ⁷²
29.9	03.825 ⁴⁵	78.66 ¹⁶⁷	16.637 ³¹	27.48 ¹⁴⁴	60.041 ¹²	27.16 ⁷⁶
June 8.9	03.744 ⁸¹	80.04 ¹³⁸	16.583 ⁵⁴	28.82 ¹³⁴	60.007 ³⁴	27.94 ⁷⁸
18.8	03.629 ¹¹⁵	81.12 ¹⁰⁸	16.509 ⁷⁴	30.01 ¹¹⁹	59.952 ⁵⁵	28.70 ⁷⁶
28.8	03.484 ¹⁴⁵	81.87 ⁷⁵	16.417 ⁹²	31.03 ¹⁰²	59.878 ⁷⁴	29.42 ⁷²
July 8.8	03.314 ¹⁷⁰	82.27 ⁴⁰	16.309 ¹⁰⁸	31.84 ⁸¹	59.788 ⁹⁰	30.07 ⁶⁵
18.8	03.123 ¹⁹¹	82.31 ⁴	16.190 ¹¹⁹	32.41 ⁵⁷	59.684 ¹⁰⁴	30.65 ⁵⁸
28.7	02.918 ²⁰⁵	81.99 ³²	16.062 ¹²⁸	32.73 ³²	59.570 ¹¹⁴	31.13 ⁴⁸
Aug. 7.7	02.706 ²¹²	81.32 ⁶⁷	15.931 ¹³¹	32.79 ⁶	59.450 ¹²⁰	31.50 ³⁷
17.7	02.497 ²⁰⁹	80.32 ¹⁰⁰	15.802 ¹²⁹	32.58 ²¹	59.328 ¹²²	31.74 ²⁴
27.6	02.300 ¹⁹⁷	79.02 ¹³⁰	15.679 ¹²³	32.09 ⁴⁹	59.213 ¹¹⁵	31.83 ⁹
Sept. 6.6	02.126 ¹⁷⁴	77.48 ¹⁵⁴	15.570 ¹⁰⁹	31.32 ⁷⁷	59.110 ¹⁰³	31.76 ⁷
16.6	01.985 ¹⁴¹	75.75 ¹⁷³	15.482 ⁸⁸	30.26 ¹⁰⁶	59.026 ⁸⁴	31.51 ²⁵
26.6	01.889 ⁹⁶	73.90 ¹⁸⁵	15.421 ⁶¹	28.91 ¹³⁵	58.968 ⁵⁸	31.06 ⁴⁵
Oct. 6.5	01.845 ⁴⁴	72.02 ¹⁸⁸	15.394 ²⁷	27.29 ¹⁶²	58.943 ²⁵	30.39 ⁶⁷
16.5	01.863 ¹⁸	70.18 ¹⁸⁴	15.408 ¹⁴	25.40 ¹⁸⁹	58.957 ¹⁴	29.48 ⁹¹
26.5	01.947 ⁸⁴	68.48 ¹⁷⁰	15.466 ⁵⁸	23.26 ²¹⁴	59.016 ⁵⁹	28.33 ¹¹⁵
Nov. 5.5	02.100 ¹⁵³	66.99 ¹⁴⁹	15.573 ¹⁰⁷	20.90 ²³⁶	59.121 ¹⁰⁵	26.94 ¹³⁹
15.4	02.321 ²²¹	65.81 ¹¹⁸	15.729 ¹⁵⁶	18.37 ²⁵³	59.275 ¹⁵⁴	25.31 ¹⁶³
25.4	02.606 ²⁸⁵	64.99 ⁸²	15.933 ²⁰⁴	15.71 ²⁶⁶	59.475 ²⁰⁰	23.47 ¹⁸⁴
Dec. 5.4	02.947 ³⁴¹	64.59 ⁴⁰	16.180 ²⁴⁷	12.99 ²⁷²	59.718 ²⁴³	21.46 ²⁰¹
15.3	03.334 ³⁸⁷	64.63 ⁴	16.465 ²⁸⁵	10.28 ²⁷¹	59.997 ²⁷⁹	19.32 ²¹⁴
25.3	03.756 ⁴²²	65.12 ⁴⁹	16.780 ³¹⁵	07.67 ²⁶¹	60.303 ³⁰⁶	17.12 ²²⁰
35.3	04.198 ⁴⁴²	66.05 ⁹³	17.113 ³³³	05.23 ²⁴⁴	60.628 ³²⁵	14.93 ²¹⁹
Mean Place	02.266	64.00	15.313	28.79	58.781	32.47
Sec δ, Tan δ	1.464	-1.070	1.056	+0.340	1.001	+0.033
L α, L δ	+0.01	-0.4	0.00	-0.4	0.00	-0.3
ω α, ω δ	-0.06	-0.5	+0.02	-0.5	0.00	-0.5
Authority and Catalogue No.	A. E.	831	A. E.	832	A. E.	839

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	-β Centauri.		π Hydræ.		α Draconis.	
	0.86	B 1	3.48	K 0	3.64	A 0 p
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 13 ^m 58	[°] 60 ['] 01	^h 14 ^m 02	[°] 26 ['] 19	^h 14 ^m 02	[°] 64 ['] 42
Jan 1.3	41.04 ^s 56	14.49 ["] 73	14.195 ^s 359	57.82 ["] 159	24.73 ^s 59	57.38 ["] 208
11.3	41.60 ^s 58	15.22 ["] 123	14.554 ^s 361	59.41 ["] 179	25.32 ^s 61	55.30 ["] 147
21.3	42.18 ^s 56	16.45 ["] 167	14.915 ^s 353	61.20 ["] 192	25.93 ^s 61	53.83 ["] 82
31.2	42.74 ^s 53	18.12 ["] 206	15.268 ^s 335	63.12 ["] 199	26.54 ^s 60	53.01 ["] 14
Feb. 10.2	43.27 ^s 49	20.18 ["] 240	15.603 ^s 310	65.11 ["] 201	27.14 ^s 56	52.87 ["] 51
20.2	43.76 ^s 45	22.58 ["] 266	15.913 ^s 282	67.12 ["] 197	27.70 ^s 51	53.38 ["] 114
Mar. 1.1	44.21 ^s 39	25.24 ["] 287	16.195 ^s 249	69.09 ["] 190	28.21 ^s 44	54.52 ["] 170
11.1	44.60 ^s 34	28.11 ["] 300	16.444 ^s 215	70.99 ["] 180	28.65 ^s 36	56.22 ["] 218
21.1	44.94 ^s 27	31.11 ["] 307	16.659 ^s 181	72.79 ["] 166	29.01 ^s 28	58.40 ["] 255
31.1	45.21 ^s 22	34.18 ["] 308	16.840 ^s 146	74.45 ["] 150	29.29 ^s 19	60.95 ["] 282
Apr. 10.0	45.43 ^s 16	37.26 ["] 302	16.986 ^s 113	75.95 ["] 135	29.48 ^s 10	63.77 ["] 296
20.0	45.59 ^s 9	40.28 ["] 292	17.099 ^s 82	77.30 ["] 119	29.58 ^s 7	66.73 ["] 300
30.0	45.68 ^s 4	43.20 ["] 276	17.181 ^s 51	78.49 ["] 102	29.59 ^s 14	69.73 ["] 292
May 10.0	45.72 ^s 2	45.96 ["] 256	17.232 ^s 21	79.51 ["] 85	29.52 ^s 21	72.65 ["] 273
19.9	45.70 ^s 8	48.52 ["] 229	17.253 ^s 7	80.36 ["] 67	29.38 ^s 21	75.38 ["] 246
29.9	45.62 ^s 13	50.81 ["] 198	17.246 ^s 33	81.03 ["] 49	29.17 ^s 26	77.84 ["] 212
June 8.9	45.49 ^s 18	52.79 ["] 163	17.213 ^s 59	81.52 ["] 31	28.91 ^s 32	79.96 ["] 170
18.8	45.31 ^s 23	54.42 ["] 125	17.154 ^s 83	81.83 ["] 12	28.59 ^s 36	81.66 ["] 124
28.8	45.08 ^s 26	55.67 ["] 83	17.071 ^s 104	81.95 ["] 6	28.23 ^s 39	82.90 ["] 75
July 8.8	44.82 ^s 29	56.50 ["] 39	16.967 ^s 121	81.89 ["] 24	27.84 ^s 41	83.65 ["] 24
18.8	44.53 ^s 32	56.89 ["] 5	16.846 ^s 135	81.65 ["] 43	27.43 ^s 41	83.89 ["] 29
28.7	44.21 ^s 32	56.84 ["] 51	16.711 ^s 142	81.42 ["] 58	27.02 ^s 42	83.60 ["] 81
Aug. 7.7	43.89 ^s 32	56.33 ["] 93	16.569 ^s 143	80.64 ["] 73	26.60 ^s 40	82.79 ["] 131
17.7	43.57 ^s 30	55.40 ["] 134	16.426 ^s 138	79.91 ["] 85	26.20 ^s 39	81.48 ["] 180
27.7	43.27 ^s 27	54.06 ["] 169	16.288 ^s 124	79.06 ["] 92	25.81 ^s 35	79.68 ["] 225
Sept. 6.6	43.00 ^s 23	52.37 ["] 198	16.164 ^s 102	78.14 ["] 96	25.46 ^s 30	77.43 ["] 267
16.6	42.77 ^s 16	50.39 ["] 221	16.062 ^s 73	77.18 ["] 95	25.16 ^s 24	74.76 ["] 304
26.6	42.61 ^s 9	48.18 ["] 234	15.989 ^s 32	76.23 ["] 89	24.92 ^s 18	71.72 ["] 336
Oct. 6.5	42.52 ^s 1	45.84 ["] 237	15.957 ^s 13	75.34 ["] 76	24.74 ^s 10	68.36 ["] 360
16.5	42.51 ^s 8	43.47 ["] 230	15.970 ^s 63	74.58 ["] 57	24.64 ^s 2	64.76 ["] 379
26.5	42.59 ^s 17	41.17 ["] 213	16.033 ^s 117	74.01 ["] 33	24.62 ^s 7	60.97 ["] 389
Nov. 5.5	42.76 ^s 26	39.04 ["] 186	16.150 ^s 171	73.68 ["] 6	24.69 ^s 17	57.08 ["] 390
15.4	43.02 ^s 35	37.18 ["] 151	16.321 ^s 223	73.62 ["] 25	24.86 ^s 27	53.18 ["] 381
25.4	43.37 ^s 42	35.67 ["] 108	16.544 ^s 269	73.87 ["] 57	25.13 ^s 36	49.37 ["] 361
Dec. 5.4	43.79 ^s 49	34.59 ["] 60	16.813 ^s 308	74.44 ["] 90	25.49 ^s 43	45.76 ["] 332
15.4	44.28 ^s 53	33.99 ["] 9	17.121 ^s 338	75.34 ["] 119	25.92 ^s 51	42.44 ["] 293
25.3	44.81 ^s 56	33.90 ["] 43	17.459 ^s 357	76.53 ["] 147	26.43 ^s 56	39.51 ["] 243
35.3	45.37 ^s	34.33 ["]	17.816 ^s	78.00 ["]	26.99 ^s	37.08 ["]
Mean Place	43.534	35.25	15.910	69.83	26.259	70.29
Sec δ, Tan δ	2.002	-1.734	1.116	-0.495	2.342	+2.117
L α, L δ	+0.02	-0.3	+0.01	-0.3	-0.03	-0.3
ω α, ω δ	-0.10	-0.5	-0.03	-0.5	+0.12	-0.5
Authority and Catalogue No.	A. E.	841	A. N.	842	A. E.	845

(12961)

2 B 2

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	θ Centauri. 2.26 K o		94 Virginis. 6.56 A o		κ Virginis. 4.31 K o	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
Mean Solar Date						
	^h 14 02	^m 36 00	^h 14 02	^m 8 32	^h 14 09	^m 9 56
Jan. 1.3	24.435 ³⁸⁸	44.37 ¹³⁶	27.238 ³³¹	48.34 ¹⁹⁷	01.457 ³³²	14.94 ¹⁹³
11.3	24.823 ³⁰⁰	45.73 ¹⁶⁵	27.569 ³³⁴	50.31 ¹⁹⁷	01.789 ³³⁵	16.87 ¹⁹³
21.3	25.213 ³⁸⁰	47.38 ¹⁸⁹	27.903 ³²⁷	52.28 ¹⁹²	02.124 ³²⁹	18.80 ¹⁸⁹
31.2	25.593 ³⁶¹	49.27 ²⁰⁶	28.230 ³¹¹	54.20 ¹⁷⁷	02.453 ³¹⁵	20.69 ¹⁷⁸
Feb. 10.2	25.954 ³³⁶	51.33 ²¹⁸	28.541 ²⁸⁹	55.97 ¹⁶¹	02.768 ²⁹³	22.47 ¹⁶³
20.2	26.290 ³⁰⁴	53.51 ²²⁴	28.830 ²⁶¹	57.58 ¹⁴¹	03.061 ²⁶⁶	24.10 ¹⁴⁴
Mar. 1.1	26.594 ²⁶⁸	55.75 ²²⁵	29.091 ²³⁰	58.99 ¹¹⁷	03.327 ²³⁶	25.54 ¹²²
11.1	26.862 ²³²	58.00 ²²¹	29.321 ¹⁹⁹	60.16 ⁹³	03.563 ²⁰⁵	26.76 ¹⁰⁰
21.1	27.094 ¹⁹⁴	60.21 ²¹⁴	29.520 ¹⁶⁶	61.09 ⁷²	03.768 ¹⁷³	27.76 ⁷⁷
31.1	27.288 ¹⁵⁷	62.35 ²⁰³	29.686 ¹³⁴	61.81 ⁴⁹	03.941 ¹⁴¹	28.53 ⁵⁵
Apr. 10.0	27.445 ¹²⁰	64.38 ¹⁹¹	29.820 ¹⁰⁴	62.30 ²⁹	04.082 ¹¹¹	29.08 ³⁶
20.0	27.565 ⁸⁴	66.29 ¹⁷⁵	29.924 ⁷⁴	62.59 ¹²	04.193 ⁸¹	29.44 ¹⁹
May 30.0	27.649 ⁵¹	68.04 ¹⁵⁹	29.998 ⁴⁷	62.71 ³	04.274 ⁵⁴	29.63 ⁴
10.0	27.700 ¹⁷	69.63 ¹³⁹	30.045 ²¹	62.68 ¹⁶	04.328 ²⁷	29.67 ⁹
19.9	27.717 ¹⁵	71.02 ¹¹⁸	30.066 ⁴	62.52 ²⁶	04.355 ¹	29.58 ²⁰
29.9	27.702 ⁴⁶	72.20 ⁹⁵	30.062 ²⁹	62.26 ³³	04.356 ²³	29.38 ²⁸
June 8.9	27.656 ⁷⁵	73.15 ⁷¹	30.033 ⁵⁰	61.93 ⁴⁰	04.333 ⁴⁶	29.10 ³⁵
18.8	27.581 ¹⁰²	73.86 ⁴⁶	29.983 ⁷⁰	61.53 ⁴⁴	04.287 ⁶⁸	28.75 ⁴⁰
28.8	27.479 ¹²⁵	74.32 ²⁰	29.913 ⁸⁹	61.09 ⁴⁷	04.219 ⁸⁶	28.35 ⁴⁴
July 8.8	27.354 ¹⁴⁴	74.52 ⁶	29.824 ¹⁰⁴	60.62 ⁵⁰	04.133 ¹⁰³	27.91 ⁴⁷
18.8	27.210 ¹⁵⁰	74.46 ³²	29.720 ¹¹⁵	60.12 ⁵⁰	04.030 ¹¹⁶	27.44 ⁴⁸
28.7	27.051 ¹⁶⁸	74.14 ⁵⁸	29.605 ¹²³	59.62 ⁴⁸	03.914 ¹²⁴	26.96 ⁴⁹
Aug. 7.7	26.883 ¹⁶⁹	73.56 ⁸¹	29.482 ¹²⁴	59.14 ⁴⁶	03.790 ¹²⁶	26.47 ⁴⁷
17.7	26.714 ¹⁶²	72.75 ¹⁰²	29.358 ¹¹⁹	58.68 ⁴¹	03.664 ¹²³	26.00 ⁴⁴
Sept. 27.7	26.552 ¹⁴⁵	71.73 ¹¹⁹	29.239 ¹⁰⁷	58.27 ³⁴	03.541 ¹¹²	25.56 ³⁷
6.6	26.407 ¹²¹	70.54 ¹³⁰	29.132 ⁸⁹	57.93 ²²	03.429 ⁹³	25.19 ²⁷
16.6	26.246 ⁸⁴	69.24 ¹³⁶	29.043 ⁶²	57.71 ⁸	03.336 ⁶⁸	24.92 ¹⁶
26.6	26.202 ⁴²	67.88 ¹³⁶	28.981 ²⁷	57.63 ⁷	03.268 ³⁴	24.76 ¹⁹
Oct. 6.5	26.160 ⁸	66.52 ¹²⁷	28.954 ¹⁵	57.70 ²⁸	03.234 ⁷	24.76 ¹⁹
16.5	26.168 ⁶⁴	65.25 ¹¹²	28.967 ⁵⁷	57.98 ⁵²	03.241 ⁵¹	24.95 ⁴¹
26.5	26.232 ¹²⁴	64.13 ⁹⁰	29.024 ¹⁰⁷	58.50 ⁷⁵	03.292 ⁹⁹	25.36 ⁶⁵
Nov. 5.5	26.356 ¹⁸³	63.23 ⁶²	29.131 ¹⁵⁶	59.25 ¹⁰¹	03.391 ¹⁵⁰	26.01 ⁹¹
15.4	26.539 ²³⁹	62.61 ²⁹	29.287 ²⁰²	60.26 ¹²⁶	03.541 ¹⁹⁷	26.92 ¹¹⁶
25.4	26.778 ²⁸⁹	62.32 ⁷	29.489 ²⁴⁶	61.52 ¹⁴⁹	03.738 ²⁴²	28.08 ¹⁴⁰
Dec. 5.4	27.067 ³¹²	62.39 ⁴⁵	29.735 ²⁸¹	63.01 ¹⁷⁰	03.980 ²⁷⁹	29.48 ¹⁶¹
15.4	27.399 ³⁶⁵	62.84 ⁸²	30.016 ³¹⁰	64.71 ¹⁸⁵	04.259 ³⁰⁹	31.09 ¹⁷⁸
25.3	27.764 ³⁸⁵	63.66 ¹¹⁸	30.326 ³²⁹	66.56 ¹⁹⁵	04.568 ³²⁸	32.87 ¹⁸⁸
35.3	28.149	64.84	30.655	68.51	04.896	34.75
Mean Place	26.283	59.25	28.794	54.63	03.062	21.53
Sec δ, Tan δ	1.236	-0.727	1.011	-0.150	1.015	-0.175
L α, L δ	+0.01	-0.3	0.00	-0.3	0.00	-0.3
ω α, ω δ	-0.04	-0.5	-0.01	-0.5	-0.01	-0.5
Authority and Catalogue No.	A. E.	843		844	A. E.	849

APPARENT PLACES OF STARS, 1928.

365

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Bootis.		γ Libræ.		δ Bootis.	
	0.24	K 0	6.30	K 0	5.36	A 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 14 12	^o ['] 19 32	^h ^m 14 19	^o ['] 11 23	^h ^m 14 23	^o ['] 19 32
Jan. 1.3	21.074 ^s	80.94 ^s	31.231 ^s	02.76 ^s	04.783 ^s	56.45 ^s
11.3	21.404 ³³⁰	78.53 ²⁴¹	31.561 ³³⁰	04.62 ¹⁸⁶	05.110 ³²⁷	54.06 ²³⁹
21.3	21.741 ³³⁷	76.42 ²¹¹	31.897 ³³⁶	06.51 ¹⁸⁹	05.447 ³³⁷	51.96 ²¹⁰
31.2	22.074 ³³³	74.66 ¹⁷⁶	32.228 ³³¹	08.36 ¹⁸⁵	05.782 ³³⁵	50.22 ¹⁷⁴
Feb. 10.2	22.395 ³²¹	73.32 ¹³⁴	32.546 ³¹⁸	10.13 ¹⁷⁷	06.106 ³²⁴	48.88 ¹³⁴
20.2	22.695 ³⁰⁰	72.41 ⁹¹	32.845 ²⁹⁹	11.77 ¹⁶⁴	06.411 ³⁰⁵	47.98 ⁹⁰
Mar. 1.2	22.968 ²⁷³	71.95 ⁴⁶	33.118 ²⁷³	13.22 ¹⁴⁵	06.693 ²⁸²	47.53 ⁴⁵
11.1	23.210 ²⁴²	71.93 ²	33.363 ²⁴⁵	14.48 ¹²⁶	06.944 ²⁵¹	47.53 [—]
21.1	23.418 ²⁰⁸	72.31 ³⁸	33.578 ²¹⁵	15.53 ¹⁰⁵	07.162 ²¹⁸	47.94 ⁴¹
31.1	23.590 ¹⁷²	73.06 ⁷⁵	33.762 ¹⁸⁴	16.36 ⁸³	07.346 ¹⁸⁴	48.72 ⁷⁸
Apr. 10.0	23.728 ¹³⁸	74.10 ¹⁰⁴	33.915 ¹⁵³	16.98 ⁶²	07.496 ¹⁵⁰	49.81 ¹⁰⁹
20.0	23.831 ¹⁰³	75.38 ¹²⁸	34.037 ¹²²	17.41 ⁴³	07.612 ¹¹⁶	51.15 ¹³⁴
30.0	23.902 ⁷¹	76.82 ¹⁴⁴	34.130 ⁹³	17.68 ²⁷	07.696 ⁸⁴	52.66 ¹⁵¹
May 10.0	23.941 ³⁹	78.35 ¹⁵³	34.194 ⁶⁴	17.79 ¹¹	07.748 ⁵²	54.27 ¹⁶¹
19.9	23.951 ¹⁰	79.90 ¹⁵⁵	34.231 ³⁷	17.78 ¹	07.770 ²²	55.91 ¹⁶⁴
29.9	23.933 ¹⁸	81.41 ¹⁵¹	34.242 ¹¹	17.66 ¹²	07.763 ⁷	57.51 ¹⁶⁰
June 8.9	23.890 ⁴³	82.83 ¹⁴²	34.227 ¹⁵	17.46 ²⁰	07.730 ³³	59.03 ¹⁵²
18.9	23.823 ⁶⁷	84.11 ¹²⁸	34.188 ³⁹	17.18 ²⁸	07.672 ⁵⁸	60.42 ¹³⁹
28.8	23.736 ⁸⁷	85.20 ¹⁰⁹	34.126 ⁶²	16.83 ³⁵	07.591 ⁸¹	61.62 ¹²⁰
July 8.8	23.630 ¹⁰⁶	86.08 ⁸⁸	34.042 ⁸⁴	16.45 ³⁸	07.489 ¹⁰²	62.61 ⁹⁹
18.8	23.509 ¹²¹	86.72 ⁶⁴	33.940 ¹⁰²	16.01 ⁴⁴	07.371 ¹¹⁸	63.37 ⁷⁶
28.7	23.376 ¹³³	87.10 ³⁸	33.824 ¹¹⁶	15.56 ⁴⁵	07.239 ¹³²	63.87 ⁵⁰
Aug. 7.7	23.236 ¹⁴⁰	87.20 ¹⁰	33.698 ¹²⁶	15.09 ⁴⁷	07.099 ¹⁴⁰	64.09 ²²
17.7	23.093 ¹⁴³	87.02 ¹⁸	33.567 ¹³¹	14.62 ⁴⁷	06.955 ¹⁴⁴	64.02 ⁷
27.7	22.955 ¹³⁸	86.55 ⁴⁷	33.439 ¹²⁸	14.18 ⁴⁴	06.813 ¹⁴²	63.66 ³⁶
Sept. 6.6	22.828 ¹²⁷	85.79 ⁷⁶	33.320 ¹¹⁹	13.79 ³⁹	06.680 ¹³³	63.00 ⁶⁶
16.6	22.719 ¹⁰⁹	84.72 ¹⁰⁷	33.219 ¹⁰¹	13.47 ³²	06.564 ¹¹⁶	62.03 ⁹⁷
26.6	22.636 ⁸³	83.36 ¹³⁶	33.142 ⁷⁷	13.26 ²¹	06.473 ⁹¹	60.76 ¹²⁷
Oct. 6.6	22.585 ⁵¹	81.71 ¹⁶⁵	33.099 ⁴³	13.19 ⁷	06.413 ⁶⁰	59.21 ¹⁵⁵
16.5	22.573 ¹²	79.78 ¹⁹³	33.095 ⁴	13.30 ¹¹	06.393 ²⁰	57.37 ¹⁸⁴
26.5	22.606 ³³	77.59 ²¹⁹	33.136 ⁴¹	13.61 ³¹	06.416 ²³	55.25 ²¹²
Nov. 5.5	22.687 ⁸¹	75.17 ²⁴²	33.227 ⁹¹	14.16 ⁵⁵	06.488 ⁷²	52.91 ²³⁴
15.4	22.818 ¹³¹	72.57 ²⁶⁰	33.368 ¹⁴¹	14.96 ⁸⁰	06.609 ¹²¹	50.36 ²⁵⁵
25.4	22.999 ¹⁸¹	69.83 ²⁷⁴	33.557 ¹⁸⁹	16.00 ¹⁰⁴	06.781 ¹⁷²	47.68 ²⁶⁸
Dec. 5.4	23.226 ²²⁷	67.01 ²⁸²	33.792 ²³⁵	17.30 ¹³⁰	07.001 ²²⁰	44.91 ²⁷⁷
15.4	23.493 ²⁶⁷	64.20 ²⁸¹	34.065 ²⁷³	18.81 ¹⁵¹	07.261 ²⁶⁰	42.14 ²⁷⁷
25.3	23.793 ³⁰⁰	61.47 ²⁷³	34.369 ³⁰⁴	20.50 ¹⁶⁹	07.555 ²⁹⁴	39.44 ²⁷⁰
35.3	24.116 ³²³	58.92 ²⁵⁵	34.695 ³²⁶	22.31 ¹⁸¹	07.874 ³¹⁹	36.91 ²⁵³
Mean Place	22.553	83.84	32.907	09.51	06.317	59.45
Sec δ , Tan δ	1.061	+0.355	1.020	-0.201	1.061	+0.355
L α , L δ	-0.01	-0.3	0.00	-0.3	-0.01	-0.3
ω α , ω δ	+0.02	-0.5	-0.01	-0.6	+0.02	-0.6
Authority and Catalogue No	A. E.	852		860		863

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ρ Bootis. 3.78 K o		γ Bootis. 3.00 F o		η Centauri. 2.65 B 3 p-A 2 p	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 14 28	^m 30 40	^h 14 29	^m 38 36	^h 14 30	^m 41 50
Jan. 1.3	42.004	66.10	09.129	73.11	53.403	17.73
11.3	42.345	63.60	09.491	70.58	53.811	18.63
21.3	42.699	61.48	09.867	68.49	54.228	19.87
31.2	43.055	59.81	10.247	66.91	54.641	21.40
Feb. 10.2	43.401	58.64	10.618	65.89	55.041	23.17
20.2	43.729	58.00	10.970	65.45	55.420	25.14
Mar. 1.2	44.032	57.89	11.296	65.58	55.770	27.24
11.1	44.304	58.29	11.588	66.27	56.088	29.42
21.1	44.540	59.17	11.841	67.45	56.370	31.64
31.1	44.739	60.45	12.052	69.06	56.614	33.86
Apr. 10.1	44.899	62.07	12.220	71.02	56.820	36.04
20.0	45.021	63.95	12.345	73.23	56.988	38.14
30.0	45.106	66.00	12.427	75.60	57.117	40.15
May 10.0	45.154	68.12	12.468	78.03	57.207	42.02
19.9	45.168	70.25	12.469	80.43	57.259	43.73
29.9	45.150	72.29	12.435	82.72	57.273	45.26
June 8.9	45.102	74.19	12.367	84.81	57.250	46.58
18.9	45.025	75.89	12.269	86.65	57.191	47.67
28.8	44.924	77.33	12.143	88.20	57.098	48.50
July 8.8	44.801	78.48	11.993	89.39	56.973	49.06
18.8	44.659	79.30	11.824	90.21	56.821	49.32
28.8	44.503	79.77	11.640	90.63	56.648	49.28
Aug. 7.7	44.337	79.88	11.446	90.63	56.459	48.95
17.7	44.167	79.61	11.250	90.21	56.264	48.33
27.7	44.000	78.98	11.058	89.37	56.070	47.45
Sept. 6.6	43.843	77.97	10.877	88.11	55.888	46.32
16.6	43.704	76.60	10.715	86.46	55.730	45.00
26.6	43.590	74.88	10.581	84.43	55.606	43.55
Oct. 6.6	43.509	72.82	10.483	82.04	55.525	42.02
16.5	43.469	70.46	10.428	79.34	55.497	40.49
26.5	43.476	67.82	10.424	76.37	55.528	39.04
Nov. 5.5	43.533	64.96	10.475	73.18	55.623	37.74
15.5	43.645	61.92	10.583	69.84	55.784	36.67
25.4	43.811	58.77	10.750	66.43	56.008	35.89
Dec. 5.4	44.027	55.60	10.972	63.03	56.290	35.44
15.4	44.290	52.49	11.245	59.74	56.622	35.37
25.3	44.591	49.54	11.560	56.65	56.995	35.67
35.3	44.922	46.83	11.908	53.88	57.396	36.36
Mean Place	43.551	72.19	10.684	81.14	55.595	32.86
Sec δ , Tan δ	1.163	+0.593	1.280	+0.799	1.342	-0.895
L α , L δ	-0.01	-0.3	-0.01	-0.3	+0.01	-0.3
ω α , ω δ	+0.03	-0.6	+0.04	-0.6	-0.05	-0.6
Authority and Catalogue No.	A. E.	869	A. E.	870	A. E.	873

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α^2 Centauri.		α Circini.		α Lupi.	
	o 33	G o-K 5	3 42	F o	2 89	B 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 14 ^m 34	[°] 60 ['] 32	^h 14 ^m 36	[°] 64 ['] 39	^h 14 ^m 37	[°] 47 ['] 04
Jan. 1 3	39 12 ^s	00 09 ^s	36 67 ^s	27 17 ^s	05 439 ^s	32 26 ^s
" 11 3	39 69 ⁵⁷	00 40 ³¹	37 31 ⁶⁴	27 26 ⁹	05 874 ⁴³⁵	32 92 ⁶⁶
21 3	40 25 ⁵⁶	01 21 ⁸¹	37 96 ⁶⁵	27 86 ⁶⁰	06 320 ⁴⁴⁶	33 96 ¹⁰⁴
31 2	40 83 ⁵⁸	02 48 ¹²⁷	38 61 ⁶⁵	28 93 ¹⁰⁷	06 765 ⁴⁴⁵	35 33 ¹³⁷
Feb. 10 2	41 38 ⁵⁵	04 14 ¹⁶⁶	39 25 ⁶⁴	30 44 ¹⁵¹	07 198 ⁴³³	37 01 ¹⁶⁸
20 2	41 90 ⁵²	06 19 ²⁰⁵	39 86 ⁶¹	32 35 ¹⁹¹	07 609 ⁴¹¹	38 92 ¹⁹¹
Mar. 1 2	42 39 ⁴⁹	08 48 ²²⁹	40 43 ⁵⁷	34 60 ²²⁵	07 992 ³⁸³	41 03 ²¹¹
11 1	42 82 ⁴³	11 02 ²⁵⁴	40 95 ⁵²	37 13 ²⁵³	08 341 ³⁴⁹	43 27 ²²⁴
21 1	43 20 ³⁸	13 78 ²⁷⁶	41 42 ⁴⁷	39 89 ²⁷⁶	08 652 ³¹¹	45 60 ²³³
31 1	43 52 ³²	16 61 ²⁸³	41 82 ⁴⁰	42 80 ²⁹¹	08 924 ²⁷²	47 98 ²³⁸
Apr. 10 1	43 79 ²⁷	19 53 ²⁹²	42 15 ³³	45 81 ³⁰¹	09 155 ²³¹	50 34 ²³⁶
20 0	44 00 ²¹	22 43 ²⁹⁰	42 42 ²⁷	48 86 ³⁰⁵	09 344 ¹⁸⁹	52 67 ²³³
30 0	44 14 ¹⁴	25 27 ²⁸⁴	42 61 ¹⁹	51 89 ³⁰³	09 490 ¹⁴⁶	54 92 ²²⁵
May 10 0	44 22 ⁸	28 01 ²⁷⁴	42 73 ¹²	54 85 ²⁹⁶	09 593 ¹⁰³	57 06 ²¹⁴
19 9	44 24 ²	30 59 ²⁵⁸	42 78 ⁵	57 67 ²⁸²	09 654 ⁶¹	59 06 ²⁰⁰
29 9	44 20 ⁴	32 96 ²³⁷	42 76 ²	60 30 ²⁶³	09 671 ¹⁷	60 87 ¹⁸¹
June 8 9	44 10 ¹⁰	35 07 ²¹¹	42 67 ⁹	62 68 ²³⁸	09 647 ²⁴	62 47 ¹⁶⁰
18 9	43 95 ¹⁵	36 88 ¹⁸¹	42 51 ¹⁶	64 77 ²⁰⁹	09 581 ⁶⁶	63 82 ¹³⁵
28 8	43 74 ²¹	38 36 ¹⁴⁸	42 29 ²²	66 51 ¹⁷⁴	09 477 ¹⁰⁴	64 89 ¹⁰⁷
July 8 8	43 49 ²⁵	39 46 ¹¹⁰	42 01 ²⁸	67 86 ¹³⁵	09 338 ¹³⁹	65 67 ⁷⁸
18 8	43 19 ³⁰	40 15 ⁶⁹	41 68 ³³	68 79 ⁹³	09 167 ¹⁷¹	66 12 ⁴⁵
28 8	42 87 ³²	40 39 ²⁴	41 32 ³⁶	69 26 ⁴⁷	08 970 ¹⁹⁷	66 24 ¹²
Aug. 7 7	42 52 ³⁵	40 19 ²⁰	40 93 ³⁹	69 27 ¹	08 757 ²¹³	66 02 ²²
17 7	42 18 ³⁴	39 58 ⁶¹	40 53 ⁴⁰	68 81 ⁴⁶	08 535 ²²²	65 46 ⁵⁶
27 7	41 84 ³⁴	38 58 ¹⁰⁰	40 14 ³⁹	67 89 ⁹²	08 314 ²²¹	64 59 ⁸⁷
Sept. 6 6	41 52 ³²	37 17 ¹⁴¹	39 77 ³⁷	66 56 ¹³³	08 107 ²⁰⁷	63 43 ¹¹⁶
16 6	41 25 ²⁷	35 40 ¹⁷⁷	39 44 ³³	64 84 ¹⁷²	07 924 ¹⁸³	62 02 ¹⁴¹
26 6	41 03 ²²	33 37 ²⁰³	39 18 ²⁶	62 82 ²⁰²	07 777 ¹⁴⁷	60 43 ¹⁵⁹
Oct. 6 6	40 87 ¹⁶	31 16 ²²¹	38 99 ¹⁹	60 56 ²²⁶	07 677 ¹⁰⁰	58 72 ¹⁷¹
16 5	40 80 ⁷	28 87 ²²⁹	38 89 ¹⁰	58 15 ²⁴¹	07 634 ⁴³	56 96 ¹⁷⁶
26 5	40 82 ²	26 56 ²³¹	38 89 [—]	55 70 ²⁴⁵	07 656 ²²	55 25 ¹⁷¹
Nov. 5 5	40 93 ¹¹	24 34 ²²²	39 00 ¹¹	53 31 ²³⁹	07 747 ⁹¹	53 67 ¹⁵⁸
15 5	41 13 ²⁰	22 33 ²⁰¹	39 21 ²¹	51 09 ²²²	07 909 ¹⁶²	52 29 ¹³⁸
25 4	41 43 ³⁰	20 60 ¹⁷³	39 53 ³²	49 13 ¹⁹⁶	08 140 ²³¹	51 19 ¹¹⁰
Dec. 5 4	41 80 ³⁷	19 27 ¹³³	39 95 ⁴²	47 53 ¹⁶⁰	08 434 ²⁹⁴	50 43 ⁷⁶
15 4	42 26 ⁴⁶	18 33 ⁹⁴	40 45 ⁵⁰	46 34 ¹¹⁹	08 784 ³⁵⁰	50 04 ³⁹
25 3	42 76 ⁵⁰	17 86 ⁴⁷	41 02 ⁵⁷	45 63 ⁷¹	09 179 ³⁹⁵	50 06 ²
35 3	43 31 ⁵⁵	17 91 ⁵	41 64 ⁶²	45 41 ²²	09 605 ⁴²⁶	50 47 ⁴¹
Mean Place	41 623	20 74	40 018	46 59	07 831	48 28
Sec δ , Tan δ	2 033	-1 770	2 337	-2 112	1 468	-1 075
L α , L δ	+0 03	-0 3	+0 03	-0 5	+0 02	-0 3
ω α , ω δ	-0 09	-0 6	-0 11	-0 6	-0 06	-0 6
Authority and Catalogue No.	A. E.	875	A. N.	877	A. N.	878

No. 875. Corrected for a parallax of 0".76. The reductions from *c. g.* to brighter star (α^2) vary during the year from + 0".414, + 1".64 to + 0".388, + 1".26.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ϵ Bootis.		α Libræ.		β Ursæ Minoris.	
	2.70	Ko	2.90	A 3	2.24	K 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 14 41	^o ['] 27 22	^h ^m 14 46	^o ['] 15 44	^h ^m 14 50	^o ['] 74 26
Jan. 1.3	48.864 ^s	31.92 ["]	51.584 ^s	29.40 ["]	51.21 ^s	46.22 ["]
11.3	49.192 ³²⁸	29.38 ²⁵⁴	51.910 ³²⁶	31.01 ¹⁶¹	51.98 ⁷⁷	43.74 ²⁴⁸
21.3	49.535 ³⁴³	27.18 ²²⁰	52.247 ³³⁷	32.70 ¹⁶⁹	52.82 ⁸⁴	41.83 ¹⁹¹
31.3	49.881 ³⁴⁶	25.39 ¹⁷⁹	52.585 ³³⁸	34.42 ¹⁷²	53.71 ⁸⁹	40.57 ¹²⁶
Feb. 10.2	50.220 ³³⁹	24.08 ¹³¹	52.914 ³²⁹	36.10 ¹⁶⁸	54.61 ⁹⁰	39.98 ⁵⁹
20.2	50.545 ³²⁵	23.27 ⁸¹	53.228 ³¹⁴	37.70 ¹⁶⁰	55.49 ⁸⁸	40.07 ⁹
Mar. 1.2	50.847 ³⁰²	22.98 ²⁹	53.520 ²⁹²	39.18 ¹⁴⁸	56.33 ⁸⁴	40.83 ⁷⁶
11.1	51.120 ²⁷³	23.19 ²¹	53.788 ²⁶⁸	40.50 ¹³²	57.09 ⁷⁶	42.21 ¹³⁸
21.1	51.362 ²⁴²	23.87 ⁶⁸	54.028 ²⁴⁰	41.65 ¹¹⁵	57.75 ⁶⁶	44.14 ¹⁹³
31.1	51.569 ²⁰⁷	24.97 ¹¹⁰	54.240 ²¹²	42.62 ⁹⁷	58.29 ⁵⁴	46.52 ²³⁸
Apr. 10.1	51.741 ¹⁷²	26.42 ¹⁴⁵	54.422 ¹⁸²	43.41 ⁷⁹	58.70 ⁴¹	49.26 ²⁷⁴
20.0	51.876 ¹³⁵	28.13 ¹⁷¹	54.574 ¹⁵²	44.03 ⁶²	58.97 ²⁷	52.24 ²⁹⁸
30.0	51.976 ¹⁰⁰	30.04 ¹⁹¹	54.698 ¹²⁴	44.50 ⁴⁷	59.10 ¹³	55.34 ³¹⁰
May 10.0	52.041 ⁶⁵	32.05 ²⁰¹	54.792 ⁹⁴	44.83 ³³	59.09 ¹	58.44 ³¹⁰
20.0	52.072 ³¹	34.09 ²⁰⁴	54.857 ⁶⁵	45.04 ²¹	58.95 ¹⁴	61.44 ³⁰⁰
29.9	52.071 ¹	36.08 ¹⁹⁹	54.893 ³⁶	45.14 ¹⁰	58.68 ²⁷	64.24 ²⁸⁰
June 8.9	52.040 ³¹	37.95 ¹⁸⁷	54.900 ⁷	45.14 ⁸	58.29 ³⁹	66.75 ²⁵¹
18.9	51.980 ⁶⁰	39.65 ¹⁷⁰	54.880 ²⁰	45.06 ⁸	57.79 ⁵⁰	68.89 ²¹⁴
28.8	51.894 ⁸⁶	41.12 ¹⁴⁷	54.832 ⁴⁸	44.90 ¹⁶	57.21 ⁵⁸	70.60 ¹⁷¹
July 8.8	51.784 ¹¹⁰	42.33 ¹²¹	54.759 ⁷³	44.68 ²²	56.56 ⁶⁵	71.84 ¹²⁴
18.8	51.653 ¹³¹	43.24 ⁹¹	54.663 ⁹⁶	44.39 ²⁹	55.85 ⁷¹	72.57 ⁷³
28.8	51.505 ¹⁴⁸	43.83 ⁵⁹	54.548 ¹¹⁵	44.04 ³⁵	55.11 ⁷⁴	72.78 ²¹
Aug. 7.7	51.346 ¹⁵⁹	44.08 ²⁵	54.418 ¹³⁰	43.64 ⁴⁰	54.34 ⁷⁷	72.45 ³³
17.7	51.180 ¹⁶⁶	43.98 ¹⁰	54.279 ¹³⁹	43.21 ⁴³	53.56 ⁷⁸	71.60 ⁸⁵
27.7	51.015 ¹⁶⁵	43.52 ⁴⁶	54.138 ¹⁴¹	42.75 ⁴⁶	52.81 ⁷⁵	70.23 ¹³⁷
Sept. 6.7	50.857 ¹⁵⁸	42.70 ⁸²	54.002 ¹³⁶	42.30 ⁴⁵	52.09 ⁷²	68.36 ¹⁸⁷
16.6	50.714 ¹⁴³	41.53 ¹¹⁷	53.880 ¹²²	41.88 ⁴²	51.43 ⁶⁶	66.04 ²³²
26.6	50.594 ¹²⁰	40.01 ¹⁵²	53.780 ¹⁰⁰	41.50 ³⁸	50.83 ⁶⁰	63.29 ²⁷⁵
Oct. 6.6	50.505 ⁸⁹	38.16 ¹⁸⁵	53.711 ⁶⁹	41.23 ²⁷	50.33 ⁵⁰	60.17 ³¹²
16.5	50.455 ⁵⁰	36.00 ²¹⁶	53.681 ³⁰	41.09 ¹⁴	49.94 ³⁹	56.73 ³⁴⁴
26.5	50.451 ⁴	33.56 ²⁴⁴	53.697 ¹⁶	41.12 ³	49.67 ²⁷	53.05 ³⁶⁸
Nov. 5.5	50.496 ⁴⁵	30.87 ²⁶⁹	53.762 ⁶⁵	41.35 ²³	49.54 ¹³	49.20 ³⁸⁵
15.5	50.593 ⁹⁷	27.98 ²⁸⁹	53.878 ¹¹⁶	41.82 ⁴⁷	49.55 ¹	45.27 ³⁹³
25.4	50.744 ¹⁵¹	24.96 ³⁰²	54.045 ¹⁶⁷	42.52 ⁷⁰	49.71 ¹⁶	41.35 ³⁹²
Dec. 5.4	50.946 ²⁰²	21.89 ³⁰⁷	54.261 ²¹⁶	43.47 ⁹⁵	50.02 ³¹	37.54 ³⁸¹
15.4	51.193 ²⁴⁷	18.84 ³⁰⁵	54.520 ²⁵⁹	44.65 ¹¹⁸	50.48 ⁴⁶	33.97 ³⁵⁷
25.4	51.480 ²⁸⁷	15.90 ²⁹⁴	54.813 ²⁹³	46.03 ¹³⁸	51.08 ⁶⁰	30.73 ³²⁴
35.3	51.797 ³¹⁷	13.18 ²⁷²	55.132 ³¹⁹	47.57 ¹⁵⁴	51.78 ⁷⁰	27.92 ²⁸¹
Mean Place	50.480	37.18	53.454	36.58	53.708	59.19
Sec δ , Tan δ	1.126	+0.518	1.039	-0.282	3.730	+3.594
L α , L δ	-0.01	-0.3	0.00	-0.3	-0.06	-0.3
ω α , ω δ	+0.03	-0.6	-0.01	-0.7	+0.18	-0.7
Authority and Catalogue No.	885		A. E. 891		A. E. 896	

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ξ ^a Libræ.		β Lupi.		κ Centauri.	
	5·63	Ko	2·81	B 2 p	3·35	B 3
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 14 52	^o ['] 11 07	^h ^m 14 53	^o ['] 42 50	^h ^m 14 54	^o ['] 41 48
Jan. 1·3	49·584 ^s	06·55	45·997 ^s	27·66	25·739 ^s	44·82
11·3	49·903 ³¹⁹	08·28 ¹⁷³	46·402 ⁴⁰⁵	28·29 ⁶³	26·137 ³⁹⁸	45·47 ⁶⁵
21·3	50·232 ³²⁹	10·04 ¹⁷⁶	46·820 ⁴¹⁸	29·25 ⁹⁶	26·550 ⁴¹³	46·46 ⁹⁹
31·3	50·564 ³³²	11·78 ¹⁷⁴	47·241 ⁴²¹	30·52 ¹²⁷	26·965 ⁴¹⁵	47·73 ¹²⁷
Feb. 10·2	50·888 ³²⁴	13·43 ¹⁶⁵	47·654 ⁴¹³	32·04 ¹⁵²	27·372 ⁴⁰⁷	49·25 ¹⁵²
20·2	51·198 ³¹⁰	14·95 ¹⁵²	48·051 ³⁹⁷	33·77 ¹⁷³	27·763 ³⁹¹	50·97 ¹⁷²
Mar. 1·2	51·489 ²⁹¹	16·29 ¹³⁴	48·423 ³⁷²	35·66 ¹⁸⁹	28·130 ³⁶⁷	52·83 ¹⁸⁶
11·2	51·755 ²⁶⁶	17·44 ¹¹⁵	48·766 ³⁴³	37·66 ²⁰⁰	28·469 ³³⁹	54·80 ¹⁹⁷
21·1	51·996 ²⁴¹	18·37 ⁹³	49·077 ³¹¹	39·73 ²⁰⁷	28·777 ³⁰⁸	56·83 ²⁰³
31·1	52·209 ²¹³	19·10 ⁷³	49·353 ²⁷⁶	41·83 ²¹⁰	29·050 ²⁷³	58·88 ²⁰⁵
Apr. 10·1	52·393 ¹⁸⁴	19·62 ⁵²	49·591 ²³⁸	43·91 ²⁰⁸	29·287 ²³⁷	60·92 ²⁰⁴
20·0	52·548 ¹⁵⁵	19·96 ³⁴	49·792 ²⁰¹	45·96 ²⁰⁵	29·486 ¹⁹⁹	62·92 ²⁰⁰
30·0	52·675 ¹²⁷	20·14 ¹⁸	49·955 ¹⁶³	47·94 ¹⁹⁸	29·648 ¹⁶²	64·84 ¹⁹²
May 10·0	52·772 ⁹⁷	20·18 ⁴	50·078 ¹²³	49·82 ¹⁸⁸	29·771 ¹²³	66·67 ¹⁸³
20·0	52·841 ⁶⁹	20·10 ⁸	50·161 ⁸³	51·58 ¹⁷⁶	29·855 ⁸⁴	68·38 ¹⁷¹
29·9	52·882 ⁴¹	19·94 ¹⁶	50·204 ⁴³	53·20 ¹⁶²	29·900 ⁴⁵	69·94 ¹⁵⁶
June 8·9	52·894 ¹²	19·70 ²⁴	50·207 ³	54·63 ¹⁴³	29·905 ⁵	71·32 ¹³⁸
18·9	52·878 ¹⁶	19·40 ³⁰	50·170 ³⁷	55·86 ¹²³	29·871 ³⁴	72·50 ¹¹⁸
28·9	52·836 ⁴²	19·06 ³⁴	50·095 ⁷⁵	56·86 ¹⁰⁰	29·799 ⁷²	73·46 ⁹⁶
July 8·8	52·767 ⁶⁹	18·69 ³⁷	49·984 ¹¹¹	57·60 ⁷⁴	29·692 ¹⁰⁷	74·16 ⁷⁰
18·8	52·675 ⁹²	18·30 ³⁹	49·841 ¹⁴³	58·06 ⁴⁶	29·553 ¹³⁹	74·60 ⁴⁴
28·8	52·564 ¹¹¹	17·90 ⁴⁰	49·671 ¹⁷⁰	58·14 ¹⁸	29·387 ¹⁶⁶	74·76 ¹⁶
Aug. 7·7	52·438 ¹²⁶	17·49 ⁴¹	49·481 ¹⁹⁰	58·12 ¹²	29·201 ¹⁸⁶	74·63 ¹³
17·7	52·301 ¹³⁷	17·09 ⁴⁰	49·279 ²⁰²	57·71 ⁴¹	29·003 ¹⁹⁸	74·21 ⁴²
27·7	52·161 ¹⁴⁰	16·72 ³⁷	49·073 ²⁰⁶	57·01 ⁷⁰	28·802 ²⁰¹	73·52 ⁶⁹
Sept. 6·7	52·026 ¹³⁵	16·39 ³³	48·876 ¹⁹⁷	56·05 ⁹⁶	28·608 ¹⁹⁴	72·59 ⁹³
16·6	51·903 ¹²³	16·13 ²⁶	48·697 ¹⁷⁹	54·87 ¹¹⁸	28·433 ¹⁷⁵	71·44 ¹¹⁵
26·6	51·801 ¹⁰²	15·97 ¹⁶	48·548 ¹⁴⁹	53·52 ¹³⁵	28·287 ¹⁴⁶	70·12 ¹³²
Oct. 6·6	51·729 ⁷²	15·93 ⁴	48·441 ¹⁰⁷	52·05 ¹⁴⁷	28·182 ¹⁰⁵	68·70 ¹⁴²
16·6	51·694 ³⁵	16·05 ¹²	48·384 ⁵⁷	50·54 ¹⁵¹	28·127 ⁵⁵	67·24 ¹⁴⁶
26·5	51·703 ⁹	16·35 ³⁰	48·387 ³	49·06 ¹⁴⁸	28·130 ³	65·81 ¹⁴³
Nov. 5·5	51·760 ⁵⁷	16·86 ⁵¹	48·454 ⁶⁷	47·68 ¹³⁸	28·196 ⁶⁶	64·49 ¹³²
15·5	51·868 ¹⁰⁸	17·59 ⁷³	48·588 ¹³⁴	46·49 ¹¹⁹	28·328 ¹³²	63·36 ¹¹³
25·4	52·027 ¹⁵⁹	18·56 ⁹⁷	48·787 ¹⁹⁹	45·54 ⁹⁵	28·525 ¹⁹⁷	62·47 ⁸⁹
Dec. 5·4	52·233 ²⁰⁶	19·74 ¹¹⁸	49·048 ²⁶¹	44·90 ⁶⁴	28·782 ²⁵⁷	61·88 ⁵⁹
15·4	52·481 ²⁴⁸	21·14 ¹⁴⁰	49·364 ³¹⁶	44·59 ³¹	29·093 ³¹¹	61·62 ²⁶
25·4	52·765 ²⁸⁴	22·70 ¹⁵⁶	49·725 ³⁶¹	44·63 ⁴	29·449 ³⁵⁶	61·71 ⁹
35·3	53·076 ³¹¹	24·39 ¹⁶⁹	50·119 ³⁹⁴	45·05 ⁴²	29·837 ³⁸⁸	62·16 ⁴⁵
Mean Place	51·439	12·16	48·396	41·77	28·112	58·63
Sec δ, Tan δ	1·019	—0·197	1·364	—0·927	1·342	—0·895
L α, L δ	0·00	—0·3	+0·02	—0·3	+0·02	—0·3
ω α, ω δ	—0·01	—0·7	—0·04	—0·7	—0·04	—0·7
Authority and Catalogue No.	899		A. E. 901		A. N. 902	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect. Mean Solar Date.	β Bootis.		γ Scorpii.		ψ Bootis.	
	3.63	G 5	3.41	M b	4.67	K o
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 14 59	^m 40 39	^h 14 59	^m 24 59	^h 15 01	^m 27 13
Jan. 1.3	12.222	77.55	48.951	50.80	19.802	33.90
11.3	12.569	74.80	49.290	52.02	20.119	31.27
21.3	12.939	72.48	49.642	53.41	20.453	28.97
31.3	13.319	70.66	49.997	54.93	20.794	27.07
Feb. 10.2	13.699	69.40	50.345	56.52	21.134	25.63
20.2	14.067	68.74	50.679	58.13	21.462	24.70
Mar. 1.2	14.414	68.68	50.994	59.72	21.771	24.29
11.2	14.733	69.20	51.285	61.24	22.056	24.40
21.1	15.017	70.26	51.549	62.68	22.311	24.99
31.1	15.263	71.80	51.784	64.02	22.535	26.01
Apr. 10.1	15.466	73.73	51.990	65.24	22.725	27.41
20.0	15.627	75.97	52.166	66.34	22.879	29.10
30.0	15.745	78.42	52.311	67.31	22.999	31.01
May 10.0	15.819	80.98	52.424	68.17	23.083	33.05
20.0	15.851	83.55	52.507	68.90	23.133	35.14
29.9	15.843	86.04	52.558	69.52	23.150	37.21
June 8.9	15.795	88.37	52.577	70.01	23.135	39.18
18.9	15.712	90.48	52.565	70.39	23.089	40.99
28.9	15.561	92.29	52.521	70.64	23.014	42.58
July 8.8	15.451	93.77	52.449	70.75	22.912	43.93
18.8	15.280	94.87	52.350	70.73	22.787	44.98
28.8	15.087	95.56	52.228	70.58	22.641	45.71
Aug. 7.7	14.879	95.82	52.088	70.30	22.481	46.10
17.7	14.663	95.65	51.936	69.90	22.310	46.14
27.7	14.445	95.04	51.779	69.38	22.136	45.82
Sept. 6.7	14.233	93.99	51.627	68.76	21.967	45.14
16.6	14.037	92.51	51.488	68.09	21.810	44.09
26.6	13.864	90.62	51.371	67.39	21.674	42.70
Oct. 6.6	13.725	88.36	51.285	66.70	21.566	40.96
16.6	13.628	85.74	51.240	66.08	21.495	38.89
26.5	13.580	82.81	51.243	65.57	21.468	36.52
Nov. 5.5	13.587	79.62	51.298	65.22	21.490	33.90
15.5	13.653	76.25	51.408	65.08	21.565	31.06
25.4	13.780	72.76	51.573	65.17	21.693	28.06
Dec. 5.4	13.966	69.26	51.789	65.52	21.873	24.99
15.4	14.207	65.82	52.052	66.13	22.101	21.91
25.4	14.497	62.56	52.352	67.00	22.371	18.93
35.3	14.826	59.58	52.682	68.10	22.674	16.13
Mean Place	13.950	85.83	51.013	60.06	21.516	39.14
Sec δ , Tan δ	1.319	+0.859	1.103	-0.466	1.125	+0.515
L α , L δ	-0.02	-0.3	+0.01	-0.3	-0.01	-0.3
ω α , ω δ	+0.04	-0.7	-0.02	-0.7	+0.02	-0.7
Authority and Catalogue No.	A. E.	906	A. E.	907	A. E.	910

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ζ Lupi.		ι Libræ.		γ Trianguli Australis.	
	3.50	K 0	4.66	A 0 p	3.06	A 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 15 07	[°] ['] 51 49	^h ^m 15 08	[°] ['] 19 31	^h ^m 15 12	[°] ['] 68 24
Jan. 1.4	03.172 ^s	20.00 ["]	04.686 ^s	05.66 ["]	05.34 ^s	37.14 ["]
" 11.3	03.628 ⁴⁵⁶	20.14 ¹⁴	05.010 ³²⁴	07.03 ¹³⁷	06.04 ⁷⁰	37.62 ⁵²
21.3	04.105 ⁴⁷⁷	20.69 ⁵⁵	05.347 ³³⁷	08.51 ¹⁴⁸	06.78 ⁷⁴	36.61 ¹
31.3	04.590 ⁴⁸⁵	21.62 ⁹³	05.689 ³⁴²	10.06 ¹⁵⁵	07.53 ⁷⁵	37.08 ⁴⁷
Feb. 10.2	05.069 ⁴⁷⁹	22.88 ¹²⁶	06.026 ³³⁷	11.61 ¹⁵⁵	08.28 ⁷⁵	38.02 ⁹⁴
20.2	05.534 ⁴⁶⁵	24.44 ¹⁵⁶	06.351 ³²⁵	13.13 ¹⁵²	09.02 ⁷⁴	39.39 ¹³⁷
Mar. 1.2	05.975 ⁴⁴¹	26.25 ¹⁸¹	06.659 ³⁰⁸	14.57 ¹⁴⁴	09.73 ⁷¹	41.16 ¹⁷⁷
11.2	06.385 ⁴¹⁰	28.27 ²⁰²	06.945 ²⁸⁶	15.90 ¹³³	10.39 ⁶⁶	43.27 ²¹¹
21.1	06.761 ³⁷⁶	30.45 ²¹⁸	07.206 ²⁶¹	17.10 ¹²⁰	10.99 ⁶⁰	45.68 ²⁴¹
31.1	07.097 ³³⁶	32.73 ²²⁸	07.441 ²³⁵	18.16 ¹⁰⁶	11.53 ⁵⁴	48.32 ²⁶⁴
Apr. 10.1	07.392 ²⁹⁵	35.08 ²³⁵	07.647 ²⁰⁶	19.07 ⁹¹	12.00 ⁴⁷	51.13 ²⁸¹
20.1	07.642 ²⁵⁰	37.46 ²³⁸	07.825 ¹⁷⁸	19.83 ⁷⁶	12.40 ⁴⁰	54.07 ²⁹⁴
30.0	07.847 ²⁰⁵	39.83 ²³⁷	07.973 ¹⁴⁸	20.46 ⁶³	12.72 ³²	57.07 ³⁰⁰
May 10.0	08.004 ¹⁵⁷	42.14 ²³¹	08.092 ¹¹⁹	20.97 ⁵¹	12.95 ²³	60.08 ³⁰¹
20.0	08.112 ¹⁰⁸	44.35 ²²¹	08.181 ⁸⁹	21.37 ⁴⁰	13.10 ¹⁵	63.03 ²⁹⁵
29.9	08.171 ⁵⁹	46.44 ²⁰⁹	08.239 ⁵⁸	21.67 ³⁰	13.16 ⁶	65.86 ²⁸³
June 8.9	08.180 ⁹	48.36 ¹⁹²	08.266 ²⁷	21.87 ²⁰	13.13 ³	68.52 ²⁶⁶
18.9	08.139 ⁴¹	50.05 ¹⁶⁹	08.263 ³	21.98 ¹¹	13.01 ¹²	70.94 ²⁴²
28.9	08.050 ⁸⁹	51.50 ¹⁴⁵	08.229 ³⁴	22.00 ²	12.81 ²⁰	73.07 ²¹³
July 8.8	07.916 ¹³⁴	52.66 ¹¹⁶	08.166 ⁶³	21.94 ⁶	12.53 ²⁸	74.86 ¹⁷⁹
18.8	07.741 ¹⁷⁵	53.50 ⁸⁴	08.076 ⁹⁰	21.80 ¹⁴	12.18 ³⁵	76.25 ¹³⁹
28.8	07.532 ²⁰⁹	54.00 ⁵⁰	07.963 ¹¹³	21.47 ²³	11.77 ⁴¹	77.20 ⁹⁵
Aug. 7.8	07.295 ²³⁷	54.14 ¹⁴	07.831 ¹³²	21.27 ³⁰	11.32 ⁴⁵	77.69 ⁴⁹
17.7	07.042 ²⁵³	53.91 ²³	07.687 ¹⁴⁴	20.90 ³⁷	10.85 ⁴⁷	77.70 ¹
27.7	06.782 ²⁶⁰	53.32 ⁵⁹	07.536 ¹⁵¹	20.47 ⁴³	10.36 ⁴⁹	77.22 ⁴⁸
Sept. 6.7	06.529 ²⁵³	52.39 ⁹³	07.388 ¹⁴⁸	20.00 ⁴⁷	09.89 ⁴⁷	76.27 ⁹⁵
16.6	06.297 ²³²	51.14 ¹²⁵	07.250 ¹³⁸	19.52 ⁴⁸	09.46 ⁴³	74.88 ¹³⁹
26.6	06.098 ¹⁹⁹	49.64 ¹⁵⁰	07.133 ¹¹⁷	19.05 ⁴⁷	09.08 ³⁸	73.10 ¹⁷⁸
Oct. 6.6	05.946 ¹⁵²	47.93 ¹⁷¹	07.046 ⁸⁷	18.63 ⁴²	08.78 ³⁰	71.00 ²¹⁰
16.6	05.853 ⁹³	46.10 ¹⁸³	06.996 ⁵⁰	18.30 ³³	08.38 ²⁰	68.65 ²⁵⁵
26.5	05.827 ²⁶	44.22 ¹⁸⁸	06.991 ⁵	18.11 ¹⁹	08.49 ⁹	66.15 ²⁵⁰
Nov. 5.5	05.876 ⁴⁹	42.38 ¹⁸⁴	07.036 ⁴⁵	18.08 ³	08.51 ²	63.61 ²⁵⁴
15.5	06.004 ¹²⁸	40.67 ¹⁷¹	07.134 ⁹⁸	18.26 ¹⁸	08.66 ¹⁵	61.14 ²⁴⁷
25.5	06.209 ²⁰⁵	39.18 ¹⁴⁹	07.285 ¹⁵¹	18.67 ⁴¹	08.94 ²⁸	58.84 ²³⁰
Dec. 5.4	06.487 ²⁷⁸	37.96 ¹²²	07.487 ²⁰²	19.31 ⁶⁴	09.34 ⁴⁰	56.80 ²⁰⁴
15.4	06.830 ³⁴³	37.08 ⁸⁸	07.733 ²⁴⁶	20.19 ⁸⁸	09.84 ⁵⁰	55.11 ¹⁶⁹
25.4	07.229 ³⁹⁹	36.58 ⁵⁰	08.018 ²⁸⁵	21.28 ¹⁰⁹	10.44 ⁶⁰	53.83 ¹²⁸
35.3	07.671 ⁴⁴²	36.48 ¹⁰	08.331 ³¹³	22.55 ¹²⁷	11.11 ⁶⁷	53.02 ⁸¹
Mean Place	06.015	35.17	06.714	13.05	09.667	54.58
Sec δ, Tan δ	1.618	-1.272	1.061	-0.355	2.718	-2.528
L α, L δ	+0.02	-0.3	+0.01	-0.3	+0.05	-0.3
ω α, ω δ	-0.06	-0.7	-0.02	-0.7	-0.11	-0.7
Authority and Catalogue No.	A. E.	914	A. N.	915	A. E.	918

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name.	δ Bootis.		β Libræ.		α^2 Libræ.	
Mag. Spect.	3.54	K o	2.74	B 8	6.74	K 2
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 15 ^m 12	^o 33 ['] 34	^h 15 ^m 13	^o 9 ['] 07	^h 15 ^m 18	^o 14 ['] 52
Jan. 1.4	34.098 ^s	50.54 ["]	05.784 ^s	01.43 ["]	58.556 ^s	35.46 ["]
11.3	34.418 ³²⁰	47.77 ²⁷⁷	06.092 ³⁰⁸	03.15 ¹⁷²	58.867 ³¹¹	36.94 ¹⁴⁸
21.3	34.760 ³⁴²	45.37 ²⁴⁰	06.413 ³²¹	04.88 ¹⁷³	59.194 ³²⁷	38.49 ¹⁵⁵
31.3	35.113 ³⁵³	43.41 ¹⁹⁶	06.740 ³²⁷	06.56 ¹⁶⁸	59.527 ³³³	40.06 ¹⁵⁷
Feb. 10.2	35.468 ³⁵⁵	41.96 ¹⁴⁵	07.064 ³²⁴	08.14 ¹⁵⁸	59.857 ³³⁰	41.58 ¹⁵²
20.2	35.813 ³⁴⁵	41.06 ⁹⁰	07.377 ³¹³	09.57 ¹⁴³	60.178 ³²¹	43.02 ¹⁴⁴
Mar. 1.2	36.142 ³²⁹	40.72 ³⁴	07.674 ²⁹⁷	10.81 ¹²⁴	60.484 ³⁰⁶	44.33 ¹³¹
11.2	36.447 ³⁰⁵	40.94 ²²	07.950 ²⁷⁶	11.84 ¹⁰³	60.769 ²⁸⁵	45.48 ¹¹⁵
21.1	36.722 ²⁷⁵	41.69 ⁷⁵	08.203 ²⁵³	12.64 ⁸⁰	61.031 ²⁶²	46.47 ⁹⁹
31.1	36.964 ²⁴²	42.91 ¹²²	08.430 ²²⁷	13.22 ⁵⁸	61.269 ²³⁸	47.27 ⁸⁰
Apr. 10.1	37.171 ²⁰⁷	44.54 ¹⁶³	08.630 ²⁰⁰	13.58 ³⁶	61.480 ²¹¹	47.90 ⁶³
20.1	37.341 ¹⁷⁰	46.48 ¹⁹⁴	08.803 ¹⁷³	13.75 ¹⁷	61.663 ¹⁸³	48.38 ⁴⁸
30.0	37.473 ¹³²	48.65 ²¹⁷	08.948 ¹⁴⁵	13.76 ¹	61.818 ¹⁵⁵	48.70 ³²
May 10.0	37.567 ⁹⁴	50.97 ²³²	09.064 ¹¹⁶	13.63 ¹³	61.945 ¹²⁷	48.89 ¹⁹
20.0	37.623 ⁵⁶	53.34 ²³⁷	09.151 ⁸⁷	13.40 ²³	62.042 ⁹⁷	48.99 ¹⁰
29.9	37.642 ¹⁹	55.67 ²³³	09.209 ⁵⁸	13.09 ³¹	62.109 ⁶⁷	48.99
June 8.9	37.625 ¹⁷	57.90 ²²³	09.238 ²⁹	12.72 ³⁷	62.145 ³⁶	48.93 ⁶
18.9	37.575 ⁵⁰	59.95 ²⁰⁵	09.237 ¹	12.31 ⁴¹	62.150 ⁵	48.81 ¹²
28.9	37.492 ⁸³	61.75 ¹⁸⁰	09.207 ³⁰	11.88 ⁴³	62.125 ²⁵	48.63 ¹⁸
July 8.8	37.379 ¹¹³	63.26 ¹⁵¹	09.149 ⁵⁸	11.45 ⁴³	62.070 ⁵⁵	48.41 ²²
18.8	37.239 ¹⁴⁰	64.45 ¹¹⁹	09.066 ⁸³	11.03 ⁴²	61.988 ⁸²	48.15 ²⁶
28.8	37.077 ¹⁶²	65.28 ⁸³	08.960 ¹⁰⁶	10.61 ⁴²	61.882 ¹⁰⁶	47.86 ²⁹
Aug. 7.8	36.898 ¹⁷⁹	65.72 ⁴⁴	08.836 ¹²⁴	10.22 ³⁹	61.756 ¹²⁶	47.54 ³²
17.7	36.707 ¹⁹¹	65.78 ⁶	08.699 ¹³⁷	09.87 ³⁵	61.615 ¹⁴¹	47.20 ³⁴
27.7	36.511 ¹⁹⁶	65.43 ³⁵	08.555 ¹⁴⁴	09.56 ³¹	61.467 ¹⁴⁸	46.85 ³⁵
Sept. 6.7	36.318 ¹⁹³	64.67 ⁷⁶	08.412 ¹⁴³	09.32 ²⁴	61.319 ¹⁴⁸	46.50 ³⁵
16.6	36.137 ¹⁸¹	63.51 ¹¹⁶	08.279 ¹³³	09.15 ¹⁷	61.180 ¹³⁹	46.17 ³³
26.6	35.976 ¹⁶¹	61.96 ¹⁵⁵	08.164 ¹¹⁵	09.09 ⁶	61.060 ¹²⁰	45.90 ²⁷
Oct. 6.6	35.843 ¹³³	60.03 ¹⁹³	08.075 ⁸⁹	09.15 ⁶	60.966 ⁹⁴	45.71 ¹⁹
16.6	35.749 ⁹⁴	57.75 ²²⁸	08.022 ⁵³	09.37 ²²	60.908 ⁵⁸	45.63 ⁸
26.5	35.700 ⁴⁹	55.16 ²⁵⁹	08.011 ¹¹	09.78 ⁴¹	60.893 ¹⁵	45.70 ⁷
Nov. 5.5	35.701 ¹	52.29 ²⁸⁷	08.047 ³⁶	10.38 ⁶⁰	60.926 ³³	45.94 ²⁴
15.5	35.757 ⁵⁶	49.21 ³⁰⁸	08.133 ⁸⁶	11.19 ⁸¹	61.010 ⁸⁴	46.38 ⁴⁴
25.5	35.869 ¹¹²	45.97 ³²⁴	08.270 ¹³⁷	12.22 ¹⁰³	61.146 ¹³⁶	47.04 ⁶⁶
Dec. 5.4	36.037 ¹⁶⁸	42.67 ³³⁰	08.456 ¹⁸⁶	13.46 ¹²⁴	61.332 ¹⁸⁶	47.92 ⁸⁸
15.4	36.257 ²²⁰	39.38 ³²⁹	08.686 ²³⁰	14.88 ¹⁴²	61.563 ²³¹	49.01 ¹⁰⁹
25.4	36.523 ²⁶⁶	36.21 ³¹⁷	08.953 ²⁶⁷	16.46 ¹⁵⁸	61.833 ²⁷⁰	50.27 ¹²⁶
35.3	36.826 ³⁰³	33.25 ²⁹⁶	09.250 ²⁹⁷	18.14 ¹⁶⁸	62.133 ³⁰⁰	51.67 ¹⁴⁰
Mean Place	35.873	57.22	07.722	05.77	60.582	41.14
Sec δ , Tan δ	1.200	+0.664	1.013	-0.161	1.035	-0.266
L α , L δ	-0.01	-0.3	0.00	-0.3	+0.01	-0.3
ω α , ω δ	+0.03	-0.7	-0.01	-0.7	-0.01	-0.8
Authority and Catalogue No.	A. E.	919	A. E.	920		926

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Ursæ Minoris.		ι Draconis.		32 Libræ.	
	3·14	A 2	3·47	K 0	5·92	K 0
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 15 20	[°] 72 04	^h 15 23	[°] 59 12	^h 15 24	[°] 16 27
Jan. 1·4	46·88 ^s	72·66 ^s	17·299 ^s	53·15 ^s	09·412 ^s	53·60 ^s
11·3	47·50 ⁶²	69·84 ²⁸²	17·718 ⁴¹⁹	50·19 ²⁹⁶	09·723 ³¹¹	55·00 ¹⁴⁰
21·3	48·20 ⁷⁰	67·55 ²²⁹	18·183 ⁴⁶⁵	47·73 ²⁴⁶	10·050 ³²⁷	56·48 ¹⁴⁸
31·3	48·96 ⁷⁶	65·86 ¹⁶⁹	18·677 ⁴⁹⁴	45·84 ¹⁸⁹	10·385 ³³⁵	57·98 ¹⁵⁰
Feb. 10·3	49·74 ⁷⁸	64·82 ¹⁰⁴	19·185 ⁵⁰⁸	44·58 ¹²⁶	10·717 ³³²	59·46 ¹⁴⁸
20·2	50·52 ⁷⁸	64·47 ³⁵	19·691 ⁵⁰⁶	44·00 ⁵⁸	11·041 ³²⁴	60·88 ¹⁴²
Mar. 1·2	51·28 ⁷⁶	64·80 ³³	20·178 ⁴⁸⁷	44·09 ⁹	11·350 ³⁰⁹	62·19 ¹³¹
11·2	51·99 ⁷¹	65·79 ⁹⁹	20·634 ⁴⁵⁶	44·82 ⁷³	11·641 ²⁹¹	63·37 ¹¹⁸
21·1	52·63 ⁶⁴	67·37 ¹⁵⁸	21·047 ⁴¹³	46·16 ¹³⁴	11·909 ²⁶⁸	64·38 ¹⁰¹
31·1	53·18 ⁵⁵	69·47 ²¹⁰	21·406 ³⁵⁹	48·04 ¹⁸⁸	12·152 ²⁴³	65·23 ⁸⁵
Apr. 10·1	53·62 ⁴⁴	72·00 ²⁵³	21·705 ²⁹⁹	50·37 ²³³	12·369 ²¹⁷	65·92 ⁶⁹
20·1	53·95 ³³	74·84 ²⁸⁴	21·939 ²³⁴	53·04 ²⁶⁷	12·559 ¹⁹⁰	66·46 ⁵⁴
30·0	54·16 ²¹	77·89 ³⁰⁵	22·106 ¹⁶⁷	55·94 ²⁹⁰	12·721 ¹⁶²	66·87 ⁴¹
May 10·0	54·25 ⁹	81·02 ³¹³	22·203 ⁹⁷	58·97 ³⁰³	12·854 ¹³³	67·15 ²⁸
20·0	54·22 ³	84·13 ³¹¹	22·232 ²⁹	62·00 ³⁰³	12·957 ¹⁰³	67·33 ¹⁸
30·0	54·07 ¹⁵	87·11 ²⁹⁸	22·195 ³⁷	64·95 ²⁹⁵	13·030 ⁷³	67·41 ⁸
June 8·9	53·81 ²⁶	89·86 ²⁷⁵	22·095 ¹⁰⁰	67·72 ²⁷⁷	13·071 ⁴¹	67·43 ²
18·9	53·45 ³⁶	92·32 ²⁴⁶	21·935 ¹⁶⁰	70·23 ²⁵¹	13·081 ¹⁰	67·39 ⁴
28·9	53·01 ⁴⁴	94·40 ²⁰⁸	21·721 ²¹⁴	72·39 ²¹⁶	13·060 ²¹	67·29 ¹⁰
July 8·8	52·49 ⁵²	96·05 ¹⁶⁵	21·459 ²⁶²	74·16 ¹⁷⁷	13·008 ⁵²	67·13 ¹⁶
18·8	51·91 ⁵⁸	97·22 ¹¹⁷	21·156 ³⁰³	75·49 ¹³³	12·928 ⁸⁰	66·93 ²⁰
28·8	51·27 ⁶⁴	97·89 ⁶⁷	20·820 ³³⁶	76·45 ⁸⁶	12·822 ¹⁰⁶	66·69 ²⁴
Aug. 7·8	50·61 ⁶⁶	98·04 ¹⁵	20·459 ³⁶¹	76·70 ³⁵	12·696 ¹²⁶	66·40 ²⁹
17·7	49·93 ⁶⁸	97·66 ³⁸	20·083 ³⁷⁶	76·55 ¹⁵	12·555 ¹⁴¹	66·08 ³²
27·7	49·24 ⁶⁹	96·76 ⁹⁰	19·702 ³⁸¹	75·88 ⁶⁷	12·404 ¹⁵¹	65·73 ³⁵
Sept. 6·7	48·57 ⁶⁷	95·35 ¹⁴¹	19·327 ³⁷⁵	74·71 ¹¹⁷	12·253 ¹⁵¹	65·37 ³⁶
16·7	47·93 ⁶⁴	93·44 ¹⁹¹	18·971 ³⁵⁶	73·04 ¹⁶⁷	12·111 ¹⁴²	65·01 ³⁶
26·6	47·35 ⁵⁸	91·07 ²³⁷	18·645 ³²⁶	70·91 ²¹³	11·986 ¹²⁵	64·69 ³²
Oct. 6·6	46·84 ⁵¹	88·29 ²⁷⁸	18·361 ²⁸⁴	68·35 ²⁵⁶	11·887 ⁹⁹	64·44 ²⁵
16·6	46·41 ⁴³	85·13 ³¹⁶	18·131 ²³⁰	65·40 ²⁹⁵	11·825 ⁶²	64·29 ¹⁵
26·5	46·08 ³³	81·67 ³⁴⁶	17·966 ¹⁶⁵	62·11 ³²⁹	11·804 ²¹	64·27 ²
Nov. 5·5	45·88 ²⁰	77·97 ³⁷⁰	17·875 ⁹¹	58·55 ³⁵⁶	11·833 ²⁹	64·42 ¹⁵
15·5	45·80 ⁸	74·11 ³⁸⁶	17·864 ¹¹	54·80 ³⁷⁵	11·913 ⁸⁰	64·75 ³³
25·5	45·85 ⁵	70·18 ³⁹³	17·938 ⁷⁴	50·95 ³⁸⁵	12·045 ¹³²	65·29 ⁵⁴
Dec. 5·4	46·04 ¹⁹	66·30 ³⁸⁸	18·098 ¹⁶⁰	47·09 ³⁸⁶	12·228 ¹⁸³	66·06 ⁷⁷
15·4	46·36 ³²	62·57 ³⁷³	18·339 ²⁴¹	43·33 ³⁷⁶	12·457 ²²⁹	67·04 ⁹⁸
25·4	46·81 ⁴⁵	59·09 ³⁴⁸	18·657 ³¹⁸	39·78 ³⁵⁵	12·725 ²⁶⁸	68·19 ¹¹⁵
35·4	47·36 ⁵⁵	55·98 ³¹¹	19·041 ³⁸⁴	36·57 ³²¹	13·024 ²⁹⁹	69·52 ¹³³
Mean Place	49·568	84·69	19·404	63·98	11·482	59·48
Sec δ , Tan δ	3·252	+ 3·094	1·954	+ 1·679	1·043	- 0·296
L α , L δ	- 0·06	- 0·3	- 0·03	- 0·3	+ 0·01	- 0·3
ω α , ω δ	+ 0·13	- 0·8	+ 0·07	- 0·8	- 0·01	- 0·8
Authority and Catalogue No.	A. E.	928	A. E.	931		933

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Lupi m.		α Coronæ Borealis.		α Serpentis.	
	2.95	B 3	2.31	A 0	2.75	K 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 15 30	^m 40 55	^h 15 31	^m 26 57	^h 15 40	^m 6 38
Jan. 1.4	17.500	21.68	36.400	16.67	41.198	63.37
11.3	17.877 377	22.02 34	36.696 296	13.93 274	41.480 282	61.17 220
21.3	18.274 397	22.65 63	37.015 319	11.49 244	41.783 303	59.10 207
31.3	18.682 408	23.55 90	37.348 333	09.43 206	42.096 313	57.23 187
Feb. 10.3	19.091 409	24.69 114	37.684 336	07.82 161	42.411 315	55.63 160
20.2	19.490 399	26.03 134	38.015 331	06.70 112	42.722 311	54.33 130
Mar. 1.2	19.874 384	27.52 149	38.333 318	06.11 59	43.022 300	53.38 95
11.2	20.236 362	29.12 160	38.632 299	06.04 7	43.305 283	52.80 58
21.2	20.572 336	30.81 169	38.907 275	06.48 44	43.569 264	52.58 22
31.1	20.880 308	32.54 173	39.154 247	07.38 90	43.810 241	52.70 12
Apr. 10.1	21.156 276	34.29 175	39.371 217	08.68 130	44.026 216	53.13 43
20.1	21.398 242	36.02 173	39.555 184	10.33 165	44.215 189	53.84 71
30.0	21.605 207	37.74 172	39.706 151	12.22 189	44.377 162	54.77 93
May 10.0	21.775 170	39.41 167	39.821 115	14.29 207	44.511 134	55.86 109
20.0	21.906 131	41.00 159	39.903 82	16.45 216	44.615 104	57.06 120
30.0	21.997 91	42.50 150	39.950 47	18.61 216	44.689 74	58.31 125
June 8.9	22.046 49 8	43.88 138	39.963 13	20.71 210	44.732 43	59.57 126
18.9	22.054 34	45.11 123	39.942 21	22.68 197	44.744 12	60.79 122
28.9	22.020 34	46.18 107	39.888 54	24.46 178	44.725 19	61.93 114
July 8.9	21.946 74	47.05 87	39.803 85	26.00 154	44.677 48	62.96 103
18.8	21.844 112	47.69 64	39.690 113	27.27 127	44.600 77	63.85 89
28.8	21.689 145	48.10 41	39.552 138	28.23 96	44.496 104	64.59 74
Aug. 7.8	21.516 173	48.25 15	39.393 159	28.85 62	44.372 124	65.15 56
17.7	21.323 193	48.13 12	39.220 173	29.12 27	44.232 140	65.53 38
27.7	21.119 204	47.75 38	39.039 181	29.03 9	44.081 151	65.70 17
Sept. 6.7	20.915 204	47.12 63	38.856 183	28.56 47	43.927 154	65.67 3
16.7	20.721 194	46.26 86	38.681 175	27.73 83	43.778 149	65.42 25
26.6	20.550 171	45.20 106	38.522 159	26.53 120	43.643 135	64.93 49
Oct. 6.6	20.413 137	44.00 120	38.389 133	24.98 155	43.530 113	64.21 72
16.6	20.320 93	42.71 129	38.289 100	23.08 190	43.448 82	63.25 96
26.6	20.281 39	41.40 131	38.230 59	20.86 222	43.405 43	62.04 121
Nov. 5.5	20.303 22	40.12 128	38.219 11	18.36 250	43.405	60.59 145
15.5	20.390 87	38.97 115	38.260 41	15.61 275	43.455 50	58.91 168
25.5	20.541 151	38.00 97	38.354 94	12.68 293	43.554 99	57.02 189
Dec. 5.4	20.756 215	37.26 74	38.501 147	09.63 305	43.703 149	54.96 206
15.4	21.029 273	36.79 47	38.699 198	06.54 309	43.897 194	52.78 218
25.4	21.351 322	36.62 17	38.941 242	03.51 303	44.132 235	50.54 224
35.4	21.712 361	36.77 15	39.220 279	00.63 288	44.401 269	48.30 224
Mean Place	20.097	33.07	38.254	21.85	43.140	63.90
Sec. δ , Tan δ	1.324	-0.867	1.122	+0.509	1.007	+0.117
L α , L δ	+0.02	-0.2	-0.01	-0.2	0.00	-0.2
ω α , ω δ	-0.04	-0.8	+0.02	-0.8	0.00	-0.8
Authority and Catalogue No.	A. E.	941	A. E.	943	A. E.	951

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	μ Serpentis.		ζ Ursæ Minoris.		ϵ Serpentis.	
	3.63	A 0	4.34	A 2	3.75	A 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 15 ^m 45	[°] 3 ['] 12	^h 15 ^m 46	[°] 78 ['] 00	^h 15 ^m 47	[°] 4 ['] 41
Jan. 1.4	49.554 ²⁸⁴	38.02 ¹⁸³	31.47 ⁷⁶	48.85 ²⁹⁸	11.486 ²⁷⁹	35.89 ²¹¹
11.4	49.838 ³⁰⁴	39.85 ¹⁷⁸	32.23 ⁹¹	45.87 ²⁴⁸	11.765 ²⁹⁹	33.78 ²⁰¹
21.3	50.142 ³¹⁴	41.63 ¹⁶⁹	33.14 ¹⁰²	43.39 ¹⁹²	12.064 ³¹¹	31.77 ¹⁸⁴
31.3	50.456 ³¹⁷	43.32 ¹⁵³	34.16 ¹⁰⁸	41.47 ¹²⁸	12.375 ³¹⁵	29.93 ¹⁵⁹
Feb. 10.3	50.773 ³¹²	44.85 ¹³¹	35.24 ¹¹¹	40.19 ⁶¹	12.690 ³¹¹	28.34 ¹³¹
20.2	51.085 ³⁰²	46.16 ¹⁰⁷	36.35 ¹¹¹	39.58 ⁷	13.001 ³⁰⁰	27.03 ⁹⁸
Mar. 1.2	51.387 ²⁸⁷	47.23 ⁸¹	37.46 ¹⁰⁵	39.65 ⁷³	13.301 ²⁸⁶	26.05 ⁶³
11.2	51.674 ²⁶⁸	48.04 ⁵²	38.51 ⁹⁷	40.38 ¹³⁵	13.587 ²⁶⁷	25.42 ²⁸
21.2	51.942 ²⁴⁶	48.56 ²⁵	39.48 ⁸⁵	41.73 ¹⁹⁰	13.854 ²⁴⁵	25.14 ⁵
31.1	52.188 ²²²	48.81 ²²	40.33 ⁷²	43.63 ²³⁶	14.099 ²²¹	25.19 ³⁶
Apr. 10.1	52.410 ¹⁹⁸	48.81 ²²	41.05 ⁵⁵	45.99 ²⁷²	14.320 ¹⁹⁵	25.55 ⁶²
20.1	52.608 ¹⁷¹	48.59 ⁴¹	41.60 ³⁷	48.71 ²⁹⁷	14.515 ¹⁶⁹	26.17 ⁸³
30.1	52.779 ¹⁴⁴	48.18 ⁵⁵	41.97 ²⁰	51.68 ³¹¹	14.684 ¹⁴¹	27.00 ¹⁰⁰
May 10.0	52.923 ¹¹⁵	47.63 ⁶⁶	42.17 ¹	54.79 ³¹³	14.825 ¹¹¹	28.00 ¹¹¹
20.0	53.038 ⁸⁵	46.97 ⁷²	42.18 ¹⁸	57.92 ³⁰⁵	14.936 ⁸¹	29.11 ¹¹⁶
30.0	53.123 ⁵⁴	46.25 ⁷⁵	42.00 ³⁴	60.97 ²⁸⁸	15.017 ⁵⁰	30.27 ¹¹⁸
June 8.9	53.177 ²³	45.50 ⁷⁶	41.66 ⁵⁰	63.85 ²⁶²	15.067 ¹⁹	31.45 ¹¹⁵
18.9	53.200 ⁸	44.74 ⁷³	41.16 ⁶⁴	66.47 ²²⁸	15.086 ¹²	32.60 ¹⁰⁸
28.9	53.192 ⁴⁰	44.01 ⁶⁸	40.52 ⁷⁸	68.75 ¹⁸⁸	15.074 ⁴³	33.68 ⁹⁸
July 8.9	53.152 ⁶⁸	43.33 ⁶¹	39.74 ⁸⁸	70.63 ¹⁴⁴	15.031 ⁷²	34.66 ⁸⁶
18.8	53.084 ⁹⁵	42.72 ⁵⁴	38.86 ⁹⁷	72.07 ⁹⁵	14.959 ⁹⁹	35.52 ⁷²
28.8	52.989 ¹¹⁹	42.18 ⁴⁵	37.89 ¹⁰³	73.02 ⁴⁴	14.860 ¹²¹	36.24 ⁵⁶
Aug. 7.8	52.870 ¹³⁶	41.73 ³⁵	36.86 ¹⁰⁷	73.46 ⁸	14.739 ¹³⁸	36.80 ³⁹
17.8	52.734 ¹⁴⁷	41.38 ²⁴	35.79 ¹⁰⁹	73.38 ⁶⁰	14.601 ¹⁵⁰	37.19 ²¹
27.7	52.587 ¹⁵²	41.14 ¹³	34.70 ¹⁰⁸	72.78 ¹¹¹	14.451 ¹⁵⁵	37.40 ¹
Sept. 6.7	52.435 ¹⁴⁸	41.01 ¹⁵	33.62 ¹⁰⁴	71.67 ¹⁶¹	14.296 ¹⁵¹	37.41 ¹⁹
16.7	52.287 ¹³⁴	41.01 ³²	32.58 ⁹⁸	70.06 ²⁰⁸	14.145 ¹³⁷	37.22 ⁴⁰
26.6	52.153 ¹¹²	41.16 ³²	31.60 ⁸⁹	67.98 ²⁵³	14.008 ¹¹⁶	36.82 ⁶²
Oct. 6.6	52.041 ⁸¹	41.48 ⁵⁰	30.71 ⁷⁷	65.45 ²⁹²	13.802 ⁸⁶	36.20 ⁸⁶
16.6	51.960 ⁴³	41.98 ⁶⁹	29.94 ⁶⁴	62.53 ³²⁵	13.866 ⁴⁷	35.34 ¹⁰⁹
26.6	51.917 ²	42.67 ⁸⁸	29.30 ⁴⁸	59.28 ³⁵⁴	13.759 ⁵	34.25 ¹³²
Nov. 5.5	51.919 ⁵¹	43.55 ¹¹⁰	28.82 ³⁰	55.74 ³⁷³	13.754 ⁴¹	32.93 ¹⁵⁶
15.5	51.970 ¹⁰¹	44.65 ¹³⁰	28.52 ¹¹	52.01 ³⁸⁴	13.798 ⁹⁵	31.37 ¹⁷⁶
25.5	52.071 ¹⁵⁰	45.95 ¹⁴⁹	28.41 ⁹	48.17 ³⁸⁵	13.893 ¹⁴¹	29.61 ¹⁹³
Dec. 5.5	52.221 ¹⁹⁷	47.44 ¹⁶⁴	28.50 ³⁰	44.32 ³⁷⁵	14.036 ¹⁹⁰	27.68 ²⁰⁷
15.4	52.418 ²³⁷	49.08 ¹⁷⁶	28.80 ⁴⁸	40.57 ³⁵⁵	14.226 ²³¹	25.61 ²¹⁴
25.4	52.655 ²⁶⁹	50.84 ¹⁸²	29.28 ⁶⁵	37.02 ³²²	14.457 ²⁶⁴	23.47 ²¹⁴
35.4	52.924	52.66	29.93	33.80	14.721	21.33
Mean Place	51.584	39.74	35.349	60.27	13.465	36.10
Sec δ , Tan δ	1.002	-0.056	4.816	+4.710	1.003	+0.082
L a , L δ	0.00	-0.2	-0.10	-0.2	0.00	-0.2
ω a , ω δ	0.00	-0.8	+0.17	-0.8	0.00	-0.8
Authority and Catalogue No.	A. E.	955	A. E.	957	A. E.	958

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Trianguli Australis. 3.04 F 0		γ Serpentis. 3.86 F 5		π Scorpii. 3.00 B 2	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
Mean Solar Date.	^h 15 48 ^m	^c 63 12 [']	^h 15 53 ^m	^o 15 53 [']	^h 15 54 ^m	^o 25 54 [']
Jan. 1.4	42.77 ^s	22.81 ^s	05.543 ^s	41.05 ^s	27.102 ^s	22.26 ^s
11.4	43.32 ⁵⁵	22.03 ⁷⁸	05.816 ²⁷³	38.52 ²⁵³	27.413 ³¹¹	23.05 ⁷⁹
21.3	43.92 ⁶⁰	21.68 ³⁵	06.113 ²⁹⁷	36.19 ²³³	27.746 ³³³	24.01 ⁹⁶
31.3	44.54 ⁶²	21.76 ⁸	06.424 ³¹¹	34.13 ²⁰⁶	28.092 ³⁴⁶	25.09 ¹⁰⁸
Feb. 10.3	45.18 ⁶⁴	22.26 ⁵⁰	06.741 ³¹⁷	32.42 ¹⁷¹	28.442 ³⁵⁰	26.24 ¹¹⁵
20.2	45.81 ⁶³	23.15 ⁸⁹	07.057 ³¹⁶	31.10 ¹³²	28.788 ³⁴⁶	27.43 ¹¹⁹
Mar. 1.2	46.43 ⁶²	24.42 ¹²⁷	07.364 ³⁰⁷	30.21 ⁸⁹	29.125 ³³⁷	28.63 ¹²⁰
11.2	47.02 ⁵⁹	26.01 ¹⁵⁹	07.655 ²⁹¹	29.77 ⁴⁴	29.446 ³²¹	29.79 ¹¹⁶
21.2	47.57 ⁵⁵	27.89 ¹⁸⁸	07.929 ²⁷⁴	29.77 [—]	29.749 ³⁰³	30.90 ¹¹¹
31.1	48.08 ⁵¹	30.02 ²¹³	08.180 ²⁵¹	30.18 ⁴¹	30.031 ²⁸²	31.94 ¹⁰⁴
Apr. 10.1	48.55 ⁴⁷	32.34 ²³²	08.407 ²²⁷	30.97 ⁷⁹	30.289 ²⁵⁸	32.89 ⁹⁵
20.1	48.96 ⁴¹	34.81 ²⁴⁷	08.607 ²⁰⁰	32.07 ¹¹⁰	30.521 ²³²	33.77 ⁸⁸
30.1	49.31 ³⁵	37.40 ²⁵⁹	08.779 ¹⁷²	33.43 ¹³⁶	30.725 ²⁰⁴	34.58 ⁸¹
May 10.0	49.59 ²⁸	40.05 ²⁶⁵	08.920 ¹⁴¹	34.98 ¹⁵⁵	30.899 ¹⁷⁴	35.30 ⁷²
20.0	49.81 ²²	42.70 ²⁶⁵	09.031 ¹¹¹	36.64 ¹⁶⁶	31.042 ¹⁴³	35.96 ⁶⁶
30.0	49.95 ¹⁴	45.31 ²⁶¹	09.110 ⁷⁹	38.35 ¹⁷¹	31.151 ¹⁰⁹	36.55 ⁵⁹
June 8.9	50.02 ⁷	47.82 ²⁵¹	09.156 ⁴⁶	40.05 ¹⁷⁰	31.226 ⁷⁵	37.08 ⁵³
18.9	50.01 ¹	50.18 ²³⁶	09.169 ¹³	41.68 ¹⁶³	31.265 ³⁹	37.53 ⁴⁵
28.9	49.93 ⁸	52.33 ²¹⁵	09.149 ²⁰	43.18 ¹⁵⁰	31.267 ²	37.91 ³⁸
July 8.9	49.78 ¹⁵	54.20 ¹⁸⁷	09.097 ⁵²	44.53 ¹³⁵	31.232 ³⁵	38.20 ²⁹
18.8	49.57 ²¹	55.77 ¹⁵⁷	09.016 ⁸¹	45.68 ¹¹⁵	31.163 ⁶⁹	38.40 ²⁰
28.8	49.29 ²⁸	56.97 ¹²⁰	08.907 ¹⁰⁹	46.60 ⁹²	31.063 ¹⁰⁰	38.49 ⁹
Aug. 7.8	48.96 ³³	57.78 ⁸¹	08.775 ¹³²	47.27 ⁶⁷	30.935 ¹²⁸	38.47 ²
17.8	48.60 ³⁶	58.16 ³⁸	08.624 ¹⁵¹	47.69 ⁴²	30.785 ¹⁵⁰	38.35 ¹²
27.7	48.21 ³⁹	58.09 ⁷	08.462 ¹⁶²	47.81 ¹²	30.620 ¹⁶⁵	38.10 ²⁵
Sept. 6.7	47.82 ³⁹	57.58 ⁵¹	08.295 ¹⁶⁷	47.65 ¹⁶	30.451 ¹⁶⁹	37.75 ³⁵
16.7	47.45 ³⁷	56.65 ⁹³	08.131 ¹⁶⁴	47.19 ⁴⁶	30.285 ¹⁶⁶	37.31 ⁴⁴
26.6	47.11 ³⁴	55.32 ¹³³	07.979 ¹⁵²	46.43 ⁷⁶	30.132 ¹⁵³	36.80 ⁵¹
Oct. 6.6	46.82 ²⁹	53.64 ¹⁶⁸	07.849 ¹³⁰	45.37 ¹⁰⁶	30.005 ¹²⁷	36.25 ⁵⁵
16.6	46.60 ²²	51.68 ¹⁹⁶	07.748 ¹⁰¹	44.00 ¹³⁷	29.912 ⁹³	35.70 ⁵⁵
26.6	46.47 ¹³	49.52 ²¹⁶	07.685 ⁶³	42.34 ¹⁶⁶	29.862 ⁵⁰	35.20 ⁵⁰
Nov. 5.5	46.43 ⁴	47.26 ²²⁶	07.666 ¹⁹	40.41 ¹⁹³	29.861 ¹	34.78 ⁴²
15.5	46.50 ⁷	44.98 ²²⁸	07.696 ³⁰	38.23 ²¹⁸	29.914 ⁵³	34.49 ²⁹
25.5	46.67 ¹⁷	42.79 ²¹⁹	07.776 ⁸⁰	35.84 ²³⁹	30.023 ¹⁰⁹	34.36 ¹³
Dec. 5.5	46.94 ²⁷	40.78 ²⁰¹	07.907 ¹³¹	33.29 ²⁵⁵	30.187 ¹⁶⁴	34.43 ⁷
15.4	47.30 ³⁶	39.04 ¹⁷⁴	08.085 ¹⁷⁸	30.65 ²⁶⁴	30.403 ²¹⁶	34.71 ²⁸
25.4	47.75 ⁴⁵	37.62 ¹⁴²	08.307 ²²²	27.98 ²⁶⁷	30.662 ²⁵⁹	35.19 ⁴⁸
35.4	48.28 ⁵³	36.58 ¹⁰⁴	08.565 ²⁵⁸	25.37 ²⁶¹	30.957 ²⁹⁵	35.88 ⁶⁹
Mean Place	46.856	36.57	07.495	43.89	29.460	28.87
Sec δ , Tan δ	2.219	-1.981	1.040	+0.285	1.112	-0.486
L α , L δ	+0.04	-0.2	-0.01	-0.2	+0.01	-0.2
ω α , ω δ	-0.07	-0.8	+0.01	-0.8	-0.02	-0.9
Authority and Catalogue No.	A. E.	959	A. N.	963	A. N.	964

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Scorpii.		β^1 Scorpii.		δ Ophiuchi.	
	2.54	B o	2.90	B I	3.03	M a
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 15 56 ^m	[°] 22 24 [']	^h 16 01 ^m	[°] 19 36 [']	^h 16 10 ^m	[°] 3 30 [']
Jan. 1.4	01.976 ^s	59.04 ["]	12.500 ^s	29.71 ["]	32.049 ^s	35.55 ["]
11.4	02.279 ³⁰³	59.99 ⁹⁵	12.795 ²⁹⁵	30.76 ¹⁰⁵	32.317 ²⁶⁸	37.29 ¹⁷⁴
21.3	02.604 ³²⁵	61.06 ¹⁰⁷	13.111 ³¹⁶	31.91 ¹¹⁵	32.607 ²⁹⁰	39.00 ¹⁷¹
31.3	02.941 ³³⁷	62.23 ¹¹⁷	13.441 ³³⁰	33.13 ¹²²	32.913 ³⁰⁶	40.62 ¹⁶²
Feb. 10.3	03.283 ³⁴²	63.44 ¹²¹	13.776 ³³⁵	34.35 ¹²²	33.225 ³¹²	42.09 ¹⁴⁷
20.3	03.622 ³³⁹	64.65 ¹²¹	14.109 ³³³	35.54 ¹¹⁹	33.537 ³¹²	43.35 ¹²⁶
Mar. 1.2	03.951 ³²⁹	65.82 ¹¹⁷	14.434 ³²⁵	36.67 ¹¹³	33.843 ³⁰⁶	44.38 ¹⁰³
11.2	04.265 ³¹⁴	66.92 ¹¹⁰	14.745 ³¹¹	37.70 ¹⁰³	34.138 ²⁹⁵	45.14 ⁷⁶
21.2	04.562 ²⁹⁷	67.93 ¹⁰¹	15.038 ²⁹³	38.61 ⁹¹	34.417 ²⁷⁹	45.62 ⁴⁸
31.1	04.837 ²⁷⁵	68.84 ⁹¹	15.312 ²⁷⁴	39.39 ⁷⁸	34.678 ²⁶¹	45.84 ²²
Apr. 10.1	05.089 ²⁵²	69.65 ⁸¹	15.563 ²⁵¹	40.05 ⁶⁶	34.918 ²⁴⁰	45.80 ⁴
20.1	05.316 ²²⁷	70.35 ⁷⁰	15.790 ²²⁷	40.59 ⁵⁴	35.136 ²¹⁸	45.54 ²⁶
30.1	05.516 ²⁰⁰	70.96 ⁶¹	15.991 ²⁰¹	41.02 ⁴³	35.329 ¹⁹³	45.09 ⁴⁵
May 10.0	05.687 ¹⁷¹	71.47 ⁵¹	16.164 ¹⁷³	41.36 ³⁴	35.496 ¹⁶⁷	44.49 ⁶⁰
20.0	05.828 ¹⁴¹	71.91 ⁴⁴	16.307 ¹⁴³	41.62 ²⁶	35.634 ¹³⁸	43.79 ⁷⁰
30.0	05.936 ¹⁰⁸	72.29 ³⁸	16.419 ¹¹²	41.82 ²⁰	35.743 ¹⁰⁹	43.02 ⁷⁷
June 9.0	06.011 ⁷⁵	72.61 ³²	16.497 ⁷⁸	41.96 ¹⁴	35.820 ⁷⁷	42.22 ⁸⁰
18.9	06.050 ³⁹	72.87 ²⁶	16.541 ⁴⁴	42.06 ¹⁰	35.864 ⁴⁴	41.42 ⁸⁰
28.9	06.054 ⁴	73.07 ²⁰	16.550 ⁹	42.12 ⁶	35.875 ¹¹	40.66 ⁷⁶
July 8.9	06.023 ³¹	73.20 ¹³	16.523 ²⁷	42.13 ¹	35.852 ²³	39.95 ⁷¹
18.8	05.958 ⁶⁵	73.27 ⁷	16.463 ⁶⁰	42.10 ³	35.798 ⁵⁴	39.31 ⁶⁴
28.8	05.861 ⁹⁷	73.26 ¹	16.372 ⁹¹	42.07 ⁹	35.713 ⁸⁵	38.76 ⁵⁵
Aug. 7.8	05.738 ¹²³	73.18 ⁸	16.253 ¹¹⁹	41.88 ¹³	35.602 ¹¹¹	38.30 ⁴⁶
17.8	05.594 ¹⁴⁴	73.01 ¹⁷	16.113 ¹⁴⁰	41.70 ¹⁸	35.469 ¹³³	37.93 ³⁷
27.7	05.435 ¹⁵⁹	72.77 ²⁴	15.957 ¹⁵⁶	41.47 ²³	35.321 ¹⁴⁸	37.67 ²⁶
Sept. 6.7	05.270 ¹⁶⁵	72.46 ³¹	15.795 ¹⁶²	41.19 ²⁸	35.165 ¹⁵⁶	37.53 ¹⁴
16.7	05.108 ¹⁶²	72.08 ³⁸	15.635 ¹⁶⁰	40.89 ³⁰	35.009 ¹⁵⁶	37.53 ¹⁴
26.7	04.960 ¹⁴⁸	71.67 ⁴¹	15.487 ¹⁴⁸	40.57 ³²	34.862 ¹⁴⁷	37.67 ¹⁴
Oct. 6.6	04.835 ¹²⁵	71.26 ⁴¹	15.361 ¹²⁶	40.27 ³⁰	34.735 ¹²⁷	37.95 ²⁸
16.6	04.743 ⁹²	70.87 ³⁹	15.267 ⁹⁴	40.02 ²⁵	34.636 ⁹⁹	38.41 ⁴⁶
26.6	04.692 ⁵¹	70.55 ³²	15.213 ⁵⁴	39.84 ¹⁸	34.573 ⁶³	39.05 ⁶⁴
Nov. 5.5	04.690 ²	70.32 ²³	15.205 ⁸	39.78 ⁶	34.553 ²⁰	39.88 ⁸³
15.5	04.740 ⁵⁰	70.24 ⁸	15.249 ⁴⁴	39.86 ⁸	34.580 ²⁷	40.91 ¹⁰³
25.5	04.845 ¹⁰⁵	70.33 ⁹	15.347 ⁹⁸	40.11 ²⁵	34.657 ⁷⁷	42.13 ¹²²
Dec. 5.5	05.003 ¹⁵⁸	70.61 ²⁸	15.497 ¹⁵⁰	40.55 ⁴⁴	34.783 ¹²⁶	43.53 ¹⁴⁰
15.4	05.211 ²⁰⁸	71.08 ⁴⁷	15.697 ²⁰⁰	41.17 ⁶²	34.957 ¹⁷⁴	45.08 ¹⁵⁵
25.4	05.463 ²⁵²	71.76 ⁶⁸	15.940 ²⁴³	41.98 ⁸¹	35.174 ²¹⁷	46.75 ¹⁶⁷
35.4	05.752 ²⁸⁹	72.60 ⁸⁴	16.219 ²⁷⁹	42.94 ⁹⁶	35.426 ²⁵²	48.48 ¹⁷³
Mean Place	04.280	64.80	14.781	34.59	34.175	36.55
Sec δ , Tan δ	1.082	-0.413	1.062	-0.356	1.002	-0.061
L a , L δ	+0.01	-0.2	+0.01	-0.2	0.00	-0.2
ω a , ω δ	-0.01	-0.9	-0.01	-0.9	0.00	-0.9
Authority and Catalogue No.	A. E.	967	A. E.	972	A. E.	983

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ^2 Normæ.		ϵ Ophiuchi.		σ Scorpii.	
	4.14	Ko	3.34	Ko	3.10	B1
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h _m 16 14	[°] _' 49 58	^h _m 16 14	[°] _' 4 31	^h _m 16 16	[°] _' 25 25
Jan. 1.4	23.413 ^s	40.36 ["]	28.378 ^s	04.38 ["]	45.997 ^s	11.58 ["]
11.4	23.804 ³⁹¹	39.85 ⁵¹	28.644 ²⁶⁶	06.06 ¹⁶⁸	46.291 ²⁹⁴	12.25 ⁶⁷
21.3	24.231 ⁴²⁷	39.66 ¹⁹	28.934 ²⁹⁰	07.72 ¹⁶⁶	46.611 ³²⁰	13.06 ⁸¹
31.3	24.682 ⁴⁵¹	39.79 ¹³	29.239 ³⁰⁵	09.29 ¹⁵⁷	46.948 ³³⁷	13.98 ⁹²
Feb. 10.3	25.145 ⁴⁶³	40.22 ⁴³	29.552 ³¹³	10.72 ¹⁴³	47.292 ³⁴⁴	14.97 ⁹⁹
20.3	25.610 ⁴⁶⁵	40.92 ⁷⁰	29.864 ³¹²	11.97 ¹²⁵	47.637 ³⁴⁵	15.99 ¹⁰²
Mar. 1.2	26.069 ⁴⁵⁹	41.88 ⁹⁶	30.171 ³⁰⁷	12.98 ¹⁰¹	47.976 ³³⁹	17.00 ¹⁰¹
11.2	26.513 ⁴⁴⁴	43.07 ¹¹⁹	30.467 ²⁹⁶	13.74 ⁷⁶	48.304 ³²⁸	17.99 ⁹⁹
21.2	26.937 ⁴²⁴	44.44 ¹³⁷	30.749 ²⁸²	14.23 ⁴⁹	48.618 ³¹⁴	18.92 ⁹³
31.2	27.337 ⁴⁰⁰	45.97 ¹⁵³	31.013 ²⁶⁴	14.46 ²³	48.913 ²⁹⁵	19.79 ⁸⁷
Apr. 10.1	27.706 ³⁶⁹	47.64 ¹⁶⁷	31.257 ²⁴⁴	14.45 ¹	49.187 ²⁷⁴	20.58 ⁷⁹
20.1	28.042 ³³⁶	49.41 ¹⁷⁷	31.479 ²²²	14.22 ²³	49.438 ²⁵¹	21.31 ⁷³
30.1	28.340 ²⁹⁸	51.25 ¹⁸⁴	31.676 ¹⁹⁷	13.80 ⁴²	49.663 ²²⁵	21.97 ⁶⁶
May 10.0	28.596 ²⁵⁶	53.15 ¹⁹⁰	31.847 ¹⁷¹	13.25 ⁵⁵	49.859 ¹⁹⁶	22.57 ⁶⁰
20.0	28.807 ²¹¹	55.06 ¹⁹¹	31.990 ¹⁴³	12.59 ⁶⁶	50.025 ¹⁶⁶	23.11 ⁵⁴
30.0	28.970 ¹⁶³	56.96 ¹⁹⁰	32.103 ¹¹³	11.86 ⁷³	50.158 ¹³³	23.61 ⁵⁰
June 9.0	29.082 ¹¹²	58.81 ¹⁸⁵	32.185 ⁸²	11.09 ⁷⁷	50.256 ⁹⁸	24.07 ⁴⁶
18.9	29.141 ⁵⁹	60.57 ¹⁷⁶	32.233 ⁴⁸	10.34 ⁷⁵	50.317 ⁶¹	24.49 ⁴²
28.9	29.145 ⁴	62.20 ¹⁶³	32.248 ¹⁵	09.61 ⁷³	50.339 ²²	24.85 ³⁶
July 8.9	29.095 ⁵⁰	63.66 ¹⁴⁶	32.229 ¹⁹	08.93 ⁶⁸	50.323 ¹⁶	25.15 ³⁰
18.9	28.994 ¹⁰¹	64.91 ¹²⁵	32.177 ⁵²	08.32 ⁶¹	50.270 ⁵³	25.38 ²³
28.8	28.845 ¹⁴⁹	65.91 ¹⁰⁰	32.095 ⁸²	07.79 ⁵³	50.182 ⁸⁸	25.53 ¹⁵
Aug. 7.8	28.654 ¹⁹¹	66.62 ⁷¹	31.986 ¹⁰⁹	07.34 ⁴⁵	50.064 ¹¹⁸	25.60 ⁷
17.8	28.430 ²²⁴	67.03 ⁴¹	31.855 ¹³¹	06.98 ³⁶	49.920 ¹⁴⁴	25.57 ³
27.7	28.183 ²⁴⁷	67.11 ⁸	31.707 ¹⁴⁸	06.72 ²⁶	49.758 ¹⁶²	25.43 ¹⁴
Sept. 6.7	27.925 ²⁵⁸	66.85 ²⁶	31.550 ¹⁵⁷	06.58 ¹⁴	49.586 ¹⁷²	25.19 ²⁴
16.7	27.668 ²⁵⁷	66.27 ⁵⁸	31.394 ¹⁵⁶	06.55 ³	49.414 ¹⁷²	24.87 ³²
26.7	27.429 ²³⁹	65.38 ⁸⁹	31.246 ¹⁴⁸	06.65 ¹⁰	49.252 ¹⁶²	24.47 ⁴⁰
Oct. 6.6	27.219 ²¹⁰	64.21 ¹¹⁷	31.117 ¹²⁹	06.89 ²⁴	49.111 ¹⁴¹	24.02 ⁴⁵
16.6	27.053 ¹⁶⁶	62.82 ¹³⁹	31.016 ¹⁰¹	07.30 ⁴¹	49.001 ¹¹⁰	23.56 ⁴⁶
26.6	26.944 ¹⁰⁹	61.28 ¹⁵⁴	30.950 ⁶⁶	07.88 ⁵⁸	48.931 ⁷⁰	23.12 ⁴⁴
Nov. 5.6	26.900 ⁴⁴	59.65 ¹⁶³	30.927 ²³	08.64 ⁷⁶	48.908 ²³	22.74 ³⁸
15.5	26.920 ²⁹	58.00 ¹⁶⁵	30.952 ²⁵	09.60 ⁹⁶	48.939 ³¹	22.46 ²⁸
25.5	27.033 ¹⁰⁴	56.42 ¹⁵⁸	31.026 ⁷⁴	10.75 ¹¹⁵	49.024 ⁸⁵	22.32 ¹⁴
Dec. 5.5	27.212 ¹⁷⁹	54.97 ¹⁴⁵	31.150 ¹²⁴	12.07 ¹³²	49.164 ¹⁴⁰	22.34 ²
15.4	27.461 ²⁴⁹	53.73 ¹²⁴	31.321 ¹⁷¹	13.55 ¹⁴⁸	49.356 ¹⁹²	22.54 ²⁰
25.4	27.775 ³¹⁴	52.74 ⁹⁹	31.535 ²¹⁴	15.14 ¹⁵⁹	49.595 ²³⁹	22.93 ³⁹
35.4	28.143 ³⁶⁸	52.04 ⁷⁰	31.786 ²⁵¹	16.80 ¹⁶⁶	49.873 ²⁷⁸	23.50 ⁵⁷
Mean Place	26.657	50.05	30.527	05.46	48.441	16.78
Sec δ , Tan δ	1.555	-1.191	1.003	-0.079	1.107	-0.475
L α , L δ	+0.03	-0.2	0.00	-0.2	+0.01	-0.2
ω α , ω δ	-0.04	-0.9	0.00	-0.9	-0.01	-0.9
Authority and Catalogue No.	A. E.	986	A. E.	987	A. N.	989

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Herculis.		η Draconis.		α Scorpii.	
	3.79	F 0	2.89	G 5	1.22	M a-A 3
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 16 ^m 18	^o 19 ['] 18	^h 16 ^m 22	^o 61 ['] 40	^h 16 ^m 24	^o 26 ['] 16
Jan. 1.4	42.463 ^s	72.35 ["]	58.03 ^s	27.38 ["]	56.825 ^s	19.95 ["]
" 11.4	42.718 ²⁵⁵	69.73 ²⁶²	58.37 ³⁴	24.01 ³³⁷	57.116 ²⁹¹	20.53 ⁵⁸
21.3	43.000 ²⁸²	67.31 ²⁴²	58.78 ⁴¹	21.03 ²⁹⁸	57.433 ³¹⁷	21.24 ⁷¹
31.3	43.301 ³⁰¹	65.17 ²¹⁴	59.24 ⁴⁶	18.55 ²⁴⁸	57.768 ³³⁵	22.07 ⁸³
Feb. 10.3	43.613 ³¹²	63.39 ¹⁷⁸	59.74 ⁵⁰	16.64 ¹⁹¹	58.114 ³⁴⁶	22.97 ⁹⁰
20.3	43.928 ³¹⁵	62.02 ¹³⁷	60.27 ⁵³	15.37 ¹²⁷	58.461 ³⁴⁷	23.92 ⁹⁵
Mar. 1.2	44.239 ³¹¹	61.11 ⁹¹	60.79 ⁵²	14.78 ⁵⁹	58.803 ³⁴²	24.87 ⁹⁵
11.2	44.541 ³⁰²	60.68 ⁴³	61.30 ⁵¹	14.87 ⁹	59.136 ³³³	25.80 ⁹³
21.2	44.828 ²⁸⁷	60.73 ⁵	61.79 ⁴⁹	15.61 ⁷⁴	59.455 ³¹⁹	26.69 ⁸⁹
31.2	45.095 ²⁶⁷	61.23 ⁵⁰	62.24 ⁴⁵	16.98 ¹³⁷	59.757 ³⁰²	27.52 ⁸³
Apr. 10.1	45.341 ²⁴⁶	62.13 ⁹⁰	62.65 ⁴¹	18.89 ¹⁹¹	60.039 ²⁸²	28.29 ⁷⁷
20.1	45.562 ²²¹	63.39 ¹²⁶	62.99 ³⁴	21.26 ²³⁷	60.298 ²⁵⁹	29.00 ⁷¹
30.1	45.755 ¹⁹³	64.95 ¹⁵⁶	63.26 ²⁷	23.99 ²⁷³	60.532 ²³⁴	29.66 ⁶⁶
May 10.0	45.919 ¹⁶⁴	66.72 ¹⁷⁷	63.47 ²¹	26.98 ²⁹⁹	60.738 ²⁰⁶	30.27 ⁶¹
20.0	46.051 ¹³²	68.63 ¹⁹¹	63.60 ¹³	30.11 ³¹³	60.913 ¹⁷⁵	30.83 ⁵⁶
30.0	46.151 ¹⁰⁰	70.61 ¹⁹⁸	63.66 ⁶	33.28 ³¹⁷	61.055 ¹⁴²	31.35 ⁵²
June 9.0	46.216 ⁶⁵	72.58 ¹⁹⁷	63.64 ²	36.38 ³¹⁰	61.162 ¹⁰⁷	31.84 ⁴⁹
18.9	46.246 ³⁰	74.50 ¹⁹²	63.55 ⁹	39.33 ²⁹⁵	61.232 ⁷⁰	32.29 ⁴⁵
28.9	46.241 ⁵	76.30 ¹⁸⁰	63.39 ¹⁶	42.04 ²⁷¹	61.262 ³⁰	32.70 ⁴¹
July 8.9	46.201 ⁴⁰	77.92 ¹⁶²	63.16 ²³	44.44 ²⁴⁰	61.253 ⁹	33.04 ³⁴
8.9	46.127 ⁷⁴	79.33 ¹⁴¹	62.87 ²⁹	46.47 ²⁰³	61.206 ⁴⁷	33.32 ²⁸
28.8	46.023 ¹⁰⁴	80.50 ¹¹⁷	62.53 ³⁴	48.07 ¹⁶⁰	61.122 ⁸⁴	33.53 ²¹
Aug. 7.8	45.891 ¹³²	81.40 ⁹⁰	62.15 ³⁸	49.21 ¹¹⁴	61.007 ¹¹⁵	33.65 ¹²
17.8	45.737 ¹⁵⁴	82.00 ⁶⁰	61.74 ⁴¹	49.85 ⁶⁴	60.864 ¹⁴³	33.67 ²
27.7	45.567 ¹⁷⁰	82.30 ³⁰	61.30 ⁴⁴	49.99 ¹⁴	60.702 ¹⁶²	33.58 ⁹
Sept. 6.7	45.388 ¹⁷⁹	82.28 ²	60.85 ⁴⁵	49.60 ³⁹	60.528 ¹⁷⁴	33.39 ¹⁹
16.7	45.209 ¹⁷⁹	81.93 ³⁵	60.40 ⁴⁵	48.70 ⁹⁰	60.352 ¹⁷⁶	33.10 ²⁹
26.7	45.037 ¹⁷²	81.25 ⁶⁸	59.97 ⁴³	47.29 ¹⁴¹	60.186 ¹⁶⁶	32.72 ³⁸
Oct. 6.6	44.884 ¹⁵³	80.24 ¹⁰¹	59.57 ⁴⁰	45.39 ¹⁹⁰	60.039 ¹⁴⁷	32.28 ⁴⁴
16.6	44.758 ¹²⁶	78.90 ¹³⁴	59.21 ³⁶	43.02 ²³⁷	59.922 ¹¹⁷	31.81 ⁴⁷
26.6	44.667 ⁹¹	77.25 ¹⁶⁵	58.92 ²⁹	40.23 ²⁷⁹	59.844 ⁷⁸	31.34 ⁴⁷
Nov. 5.6	44.618 ⁴⁹	75.31 ¹⁹⁴	58.69 ²³	37.08 ³¹⁵	59.812 ³²	30.92 ⁴²
15.5	44.617 ¹	73.10 ²²¹	58.54 ¹⁵	33.62 ³⁴⁶	59.834 ²²	30.59 ³³
25.5	44.666 ⁴⁹	70.66 ²⁴⁴	58.48 ⁶	29.93 ³⁶⁹	59.912 ⁷⁸	30.38 ²¹
Dec. 5.5	44.767 ¹⁰¹	68.04 ²⁶²	58.51 ³	26.12 ³⁸¹	60.044 ¹³²	30.32 ⁶
15.4	44.917 ¹⁵⁰	65.32 ²⁷²	58.63 ¹²	22.27 ³⁸⁵	60.229 ¹⁸⁵	30.43 ¹¹
25.4	45.113 ¹⁹⁶	62.57 ²⁷⁵	58.84 ²¹	18.51 ³⁷⁶	60.462 ²³³	30.72 ²⁹
35.4	45.349 ²³⁶	59.87 ²⁷⁰	59.14 ³⁰	14.96 ³⁵⁵	60.736 ²⁷⁴	31.19 ⁴⁷
Mean Place	44.503	76.05	60.617	36.60	59.318	24.83
Sec δ , Tan δ	1.060	+0.351	2.108	+1.855	1.115	-0.494
L α , L δ	-0.01	-0.2	-0.04	-0.2	+0.01	-0.2
ω α , ω δ	+0.01	-0.9	+0.05	-0.9	-0.01	0.9
Authority and Catalogue No.	A. E.	992	A. E.	1001	A. E.	1002

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Herculis.		λ Ophiuchi <i>m</i> .		τ Scorpii.	
	2.81	Ko	3.85	Ao	2.91	Bo
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	ⁿ 16 ^m 27	^o 21 ['] 38	^h 16 ^m 27	^o 2 ['] 08	^h 16 ^m 31	^o 28 ['] 04
Jan. 1.4	05.297 ^s	39.36 ["]	14.641 ^s	24.84 ["]	21.197 ^s	00.08 ["]
11.4	05.545 ²⁴⁸	36.66 ²⁷⁰	14.892 ²⁵¹	22.90 ¹⁹⁴	21.486 ²⁸⁹	00.52 ⁴⁴
21.4	05.822 ²⁷⁷	34.16 ²⁵⁰	15.168 ²⁷⁶	21.03 ¹⁸⁷	21.803 ³¹⁷	01.11 ⁵⁹
31.3	06.120 ²⁹⁸	31.95 ²²¹	15.463 ²⁹⁵	19.29 ¹⁷⁴	22.140 ³³⁷	01.82 ⁷¹
Feb. 10.3	06.431 ³¹¹	30.12 ¹⁸³	15.767 ³⁰⁴	17.76 ¹⁵³	22.487 ³⁴⁷	02.62 ⁸⁰
20.3	06.747 ³¹⁶	28.71 ¹⁴¹	16.074 ³⁰⁷	16.49 ¹²⁷	22.838 ³⁵¹	03.48 ⁸⁶
Mar. 1.2	07.061 ³¹⁴	27.78 ⁹³	16.378 ³⁰⁴	15.51 ⁹⁸	23.186 ³⁴⁸	04.36 ⁸⁸
11.2	07.367 ³⁰⁶	27.35 ⁴³	16.673 ²⁹⁵	14.85 ⁶⁶	23.525 ³³⁹	05.25 ⁸⁹
21.2	07.659 ²⁹²	27.41 ⁶	16.956 ²⁸³	14.52 ³³	23.852 ³²⁷	06.11 ⁸⁶
31.2	07.933 ²⁷⁴	27.94 ⁵³	17.223 ²⁶⁷	14.52 ³¹⁰	24.162 ³¹⁰	06.94 ⁸³
Apr. 10.1	08.186 ²⁵³	28.90 ⁹⁶	17.472 ²⁴⁹	14.81 ²⁹	24.453 ²⁹¹	07.73 ⁷⁹
20.1	08.414 ²²⁸	30.24 ¹³⁴	17.699 ²²⁷	15.36 ⁵⁵	24.722 ²⁶⁹	08.47 ⁷⁴
30.1	08.615 ²⁰¹	31.88 ¹⁶⁴	17.903 ²⁰⁴	16.12 ⁷⁶	24.965 ²⁴³	09.18 ⁷¹
May 10.1	08.786 ¹⁷¹	33.75 ¹⁸⁷	18.081 ¹⁷⁸	17.06 ⁹⁴	25.181 ²¹⁶	09.85 ⁶⁷
20.0	08.925 ¹³⁹	35.77 ²⁰²	18.231 ¹⁵⁰	18.12 ¹⁰⁶	25.366 ¹⁸⁵	10.49 ⁶⁴
30.0	09.031 ¹⁰⁶	37.87 ²¹⁰	18.351 ¹²⁰	19.25 ¹¹³	25.517 ¹⁵¹	11.11 ⁶²
June 9.0	09.102 ⁷¹	39.98 ²¹¹	18.439 ⁸⁸	20.40 ¹¹⁵	25.632 ¹¹⁵	11.68 ⁵⁷
18.9	09.136 ³⁴	42.02 ²⁰⁴	18.494 ⁵⁵	21.53 ¹¹³	25.709 ⁷⁷	12.23 ⁵⁵
28.9	09.134 ²	43.94 ¹⁹²	18.514 ²⁰	22.62 ¹⁰⁹	25.745 ³⁶	12.73 ⁵⁰
July 8.9	09.095 ³⁹	45.69 ¹⁷⁵	18.500 ¹⁴	23.61 ⁹⁹	25.741 ⁴	13.18 ⁴⁵
18.9	09.023 ⁷²	47.21 ¹⁵²	18.453 ⁴⁷	24.49 ⁸⁸	25.698 ⁴³	13.56 ³⁸
28.8	08.918 ¹⁰⁵	48.48 ¹²⁷	18.373 ⁸⁰	25.25 ⁷⁶	25.617 ⁸¹	13.85 ²⁹
Aug. 7.8	08.785 ¹³³	49.46 ⁹⁸	18.265 ¹⁰⁸	25.86 ⁶¹	25.502 ¹¹⁵	14.05 ²⁰
17.8	08.628 ¹⁵⁷	50.14 ⁶⁸	18.134 ¹³¹	26.32 ⁴⁶	25.359 ¹⁴³	14.13 ⁸
27.8	08.453 ¹⁷⁵	50.49 ³⁵	17.985 ¹⁴⁹	26.62 ³⁰	25.194 ¹⁶⁵	14.09 ⁴
Sept. 6.7	08.268 ¹⁸⁵	50.50 ¹	17.825 ¹⁶⁰	26.76 ¹⁴	25.017 ¹⁷⁷	13.93 ¹⁶
16.7	08.082 ¹⁸⁶	50.17 ³³	17.663 ¹⁶²	26.70 ⁶	24.838 ¹⁷⁹	13.65 ²⁸
26.7	07.903 ¹⁷⁹	49.49 ⁶⁸	17.509 ¹⁵⁴	26.45 ²⁵	24.666 ¹⁷²	13.27 ³⁸
Oct. 6.6	07.740 ¹⁶³	48.46 ¹⁰³	17.370 ¹³⁹	26.00 ⁴⁵	24.513 ¹⁵³	12.81 ⁴⁶
16.6	07.604 ¹³⁶	47.10 ¹³⁶	17.257 ¹¹³	25.35 ⁶⁵	24.389 ¹²⁴	12.29 ⁵²
26.6	07.502 ¹⁰²	45.40 ¹⁷⁰	17.178 ⁷⁹	24.47 ⁸⁸	24.305 ⁸⁴	11.76 ⁵³
Nov. 5.6	07.442 ⁶⁰	43.39 ²⁰¹	17.140 ³⁸	23.38 ¹⁰⁹	24.268 ³⁷	11.26 ⁵⁰
15.5	07.429 ¹³	41.11 ²²⁸	17.148 ⁸	22.08 ¹³⁰	24.283 ¹⁵	10.82 ⁴⁴
25.5	07.467 ³⁸	38.59 ²⁵²	17.205 ⁵⁷	20.57 ¹⁵¹	24.355 ⁷²	10.49 ³³
Dec. 5.5	07.556 ⁸⁹	35.89 ²⁷⁰	17.311 ¹⁰⁶	18.89 ¹⁶⁸	24.483 ¹²⁸	10.30 ¹⁹
15.5	07.696 ¹⁴⁰	33.07 ²⁸²	17.465 ¹⁵⁴	17.06 ¹⁸³	24.664 ¹⁸¹	10.28 ²
25.4	07.883 ¹⁸⁷	30.23 ²⁸⁴	17.662 ¹⁹⁷	15.14 ¹⁹²	24.894 ²³⁰	10.44 ¹⁶
35.4	08.111 ²²⁸	27.46 ²⁷⁷	17.896 ²³⁴	13.19 ¹⁹⁵	25.165 ²⁷¹	10.76 ³²
Mean Place	07.363	43.50	16.777	25.47	23.751	04.86
Sec δ , Tan δ	1.076	+0.397	1.001	+0.037	1.133	-0.533
L a , L δ	-0.01	-0.2	0.00	-0.2	+0.01	-0.2
ω a , ω δ	+0.01	-0.9	0.00	-0.9	-0.01	-0.9
Authority and Catalogue No.	A. E.	1005	A. N.	1006	A. N.	1008

APPARENT PLACES OF STAR , **AT UPPER TRANSIT AT GREENWICH.**

Name. Mag. Spect.	ζ Ophiuchi.		24 Scorpii.		ζ Herculis (<i>Brighter Star</i>).	
	2.70	B o	5.04	K o	3.00	G o
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 16 33	[°] ['] 10 25	^h ^m 16 37	[°] ['] 17 36	^h ^m 16 38	[°] ['] 31 43
Jan. 1.4	^s 09.207	["] 19.70	^s 21.931	["] 12.37	^s 32.058	["] 50.28
" 11.4	09.465 ²⁵⁸	21.03 ¹³³	22.195 ²⁶⁴	13.31 ⁹⁴	32.300 ²⁴²	47.26 ³⁰²
" 21.4	09.749 ²⁸⁴	22.39 ¹³⁶	22.486 ²⁹¹	14.33 ¹⁰²	32.576 ²⁷⁶	44.49 ²⁷⁷
" 31.3	10.052 ³⁰³	23.71 ¹³²	22.796 ³¹⁰	15.38 ¹⁰⁵	32.878 ³⁰²	42.08 ²⁴¹
Feb. 10.3	10.364 ³¹²	24.95 ¹²⁴	23.118 ³²²	16.41 ¹⁰³	33.198 ³²⁰	40.09 ¹⁹⁹
" 20.3	10.680 ³¹⁶	26.06 ¹¹¹	23.443 ³²⁵	17.40 ⁹⁹	33.527 ³²⁹	38.60 ¹⁴⁹
Mar. 1.3	10.993 ³¹³	27.01 ⁹⁵	23.766 ³²³	18.29 ⁸⁹	33.857 ³³⁰	37.66 ⁹⁴
" 11.2	11.298 ³⁰⁵	27.77 ⁷⁶	24.082 ³¹⁶	19.07 ⁷⁸	34.183 ³²⁶	37.29 ³⁷
" 21.2	11.592 ²⁹⁴	28.33 ⁵⁶	24.387 ³⁰⁵	19.73 ⁶⁶	34.496 ³¹³	37.48 ¹⁹
" 31.2	11.870 ²⁷⁸	28.68 ³⁵	24.678 ²⁹¹	20.25 ⁵²	34.790 ²⁹⁴	38.21 ⁷³
Apr. 10.1	12.131 ²⁶¹	28.82 ¹⁴	24.951 ²⁷³	20.63 ³⁸	35.063 ²⁷³	39.43 ¹²²
" 20.1	12.372 ²⁴¹	28.79 ³	25.204 ²⁵³	20.89 ²⁶	35.309 ²⁴⁶	41.08 ¹⁶⁵
" 30.1	12.590 ²¹⁸	28.62 ¹⁷	25.434 ²³⁰	21.05 ¹⁶	35.525 ²¹⁶	43.08 ²⁰⁰
May 10.1	12.782 ¹⁹²	28.33 ²⁹	25.639 ²⁰⁵	21.13 ⁸	35.708 ¹⁸³	45.35 ²²⁷
" 20.0	12.947 ¹⁶⁵	27.94 ³⁹	25.816 ¹⁷⁷	21.14 ¹	35.855 ¹⁴⁷	47.79 ²⁴⁴
" 30.0	13.083 ¹³⁶	27.50 ⁴⁴	25.962 ¹⁴⁶	21.11 ³	35.964 ¹⁰⁹	50.33 ²⁵⁴
June 9.0	13.186 ¹⁰³	27.03 ⁴⁷	26.075 ¹¹³	21.06 ⁵	36.035 ⁷¹	52.88 ²⁵⁵
" 19.0	13.255 ⁶⁹	26.56 ⁴⁷	26.152 ⁷⁷	20.99 ⁷	36.065 ³⁰	55.35 ²⁴⁷
" 28.9	13.288 ³³	26.10 ⁴⁶	26.192 ⁴⁰	20.92 ⁷	36.054 ¹¹	57.68 ²³³
July 8.9	13.285 ³	25.67 ⁴³	26.194 ²	20.84 ⁸	36.005 ⁴⁹	59.80 ²¹²
" 18.9	13.247 ³⁸	25.27 ⁴⁰	26.159 ³⁵	20.76 ⁸	35.916 ⁸⁹	61.67 ¹⁸⁷
" 28.8	13.176 ⁷¹	24.92 ³⁵	26.089 ⁷⁰	20.67 ⁹	35.791 ¹²⁵	63.23 ¹⁵⁶
Aug. 7.8	13.074 ¹⁰²	24.61 ³¹	25.987 ¹⁰²	20.57 ¹⁰	35.635 ¹⁵⁶	64.45 ¹²²
" 17.8	12.947 ¹²⁷	24.35 ²⁶	25.858 ¹²⁹	20.45 ¹²	35.452 ¹⁸³	65.30 ⁸⁵
" 27.8	12.800 ¹⁴⁷	24.13 ²²	25.708 ¹⁵⁰	20.32 ¹³	35.250 ²⁰²	65.76 ⁴⁶
Sept. 6.7	12.642 ¹⁵⁸	23.97 ¹⁶	25.545 ¹⁶³	20.17 ¹⁵	35.036 ²¹⁴	65.82 ⁶
" 16.7	12.480 ¹⁶²	23.87 ¹⁰	25.378 ¹⁶⁷	20.01 ¹⁶	34.818 ²¹⁸	65.47 ³⁵
" 26.7	12.324 ¹⁵⁶	23.84 ³	25.218 ¹⁶⁰	19.85 ¹⁶	34.606 ²¹²	64.70 ⁷⁷
Oct. 6.7	12.185 ¹³⁹	23.90 ⁶	25.074 ¹⁴⁴	19.70 ¹⁵	34.410 ¹⁹⁶	63.52 ¹¹⁸
" 16.6	12.072 ¹¹³	24.06 ¹⁶	24.955 ¹¹⁹	19.59 ¹¹	34.240 ¹⁷⁰	61.94 ¹⁵⁸
" 26.6	11.993 ⁷⁹	24.35 ²⁹	24.872 ⁸³	19.55 ⁴	34.105 ¹³⁵	59.97 ¹⁹⁷
Nov. 5.6	11.956 ³⁷	24.76 ⁴¹	24.832 ⁴⁰	19.60 ⁵	34.014 ⁹¹	57.66 ²³¹
" 15.5	11.966 ¹⁰	25.34 ⁵⁸	24.841 ⁹	19.76 ¹⁶	33.971 ⁴³	55.03 ²⁶³
" 25.5	12.026 ⁶⁰	26.09 ⁷⁵	24.901 ⁶⁰	20.06 ³⁰	33.981 ¹⁰	52.14 ²⁸⁹
Dec. 5.5	12.136 ¹¹⁰	27.00 ⁹¹	25.013 ¹¹²	20.51 ⁴⁵	34.046 ⁶⁵	49.07 ³⁰⁷
" 15.5	12.295 ¹⁵⁹	28.06 ¹⁰⁶	25.175 ¹⁶²	21.12 ⁶¹	34.165 ¹¹⁹	45.89 ³¹⁸
" 25.4	12.499 ²⁰⁴	29.25 ¹¹⁹	25.383 ²⁰⁸	21.87 ⁷⁵	34.336 ¹⁷¹	42.69 ³²⁰
" 35.4	12.739 ²⁴⁰	30.53 ¹²⁸	25.631 ²⁴⁸	22.75 ⁸⁸	34.554 ²¹⁸	39.58 ³¹¹
Mean Place	11.478	21.22	24.311	14.97	34.202	56.13
Sec δ, Tan δ	1.017	-0.184	1.049	-0.317	1.176	+0.618
L α, L δ	0.00	-0.1	+0.01	-0.1	-0.02	-0.1
ω α, ω δ	0.00	-0.9	-0.01	-0.9	+0.01	-0.9
Authority and Catalogue No.	A. E.	1013	A. N.	1016	1017	

No. 1017. The reductions from *c.g.* to brighter star vary during the year from -0^s.022, -0^s.25 to -0^s.017, -0^s.25.

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	η Herculis. 3.61 Ko		α Trianguli Australis. 1.88 K 2		ϵ Scorpii. - 2.36 Ko	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
Mean Solar Date.	^h 16 40	^m 39 03	^h 16 40	^m 68 53	^h 16 45	^m 34 09
Jan. 1.4	23.543 ²⁴⁶	23.20 ³²¹	56.01 ⁵⁸	43.03 ¹⁶¹	27.002 ²⁹³	45.45 ²
11.4	23.589 ²⁸⁷	19.99 ²⁹³	56.59 ⁶⁶	41.42 ¹²⁴	27.295 ³²⁵	45.47 ²¹
21.4	23.876 ³¹⁷	17.06 ²⁵⁴	57.25 ⁷¹	40.18 ⁸³	27.620 ³⁴⁷	45.68 ³⁶
31.3	24.193	14.52	57.96	39.35	27.967	46.04
Feb. 10.3	24.532 ³³⁹	12.45 ²⁰⁷	58.72 ⁷⁶	38.93 ⁴²	28.329 ³⁶²	46.55 ⁵¹
20.3	24.882 ³⁵⁰	10.91 ¹⁵⁴	59.50 ⁷⁸	38.93 ⁴¹	28.698 ³⁶⁹	47.17 ⁶²
Mar. 1.3	25.236 ³⁵²	09.97 ⁹⁴	60.28 ⁷⁸	39.34 ⁸⁰	29.066 ³⁶⁸	47.89 ⁷²
11.2	25.584 ³⁴⁸	09.64 ³³	61.05 ⁷⁷	40.14	29.428 ³⁶²	48.67 ⁷⁸
21.2	25.919 ³³⁵	09.91 ²⁷	61.80 ⁷⁵	41.30 ¹¹⁶	29.779 ³⁵¹	49.49 ⁸²
31.2	26.235 ³¹⁶	10.76 ⁸⁵	62.52 ⁷²	42.80 ¹⁵⁰	30.115 ³³⁶	50.35 ⁸⁶
Apr. 10.1	26.526 ²⁹¹	12.13 ¹³⁷	63.19 ⁶⁷	44.60 ¹⁸⁰	30.432 ³¹⁷	51.23 ⁸⁸
20.1	26.787 ²⁶¹	13.96 ¹⁸³	63.80 ⁶¹	46.66 ²⁰⁶	30.728 ²⁹⁶	52.12 ⁸⁹
30.1	27.014 ²²⁷	16.17 ²²¹	64.35 ⁵⁵	48.94 ²²⁸	30.998 ²⁷⁰	53.03 ⁹¹
Ma. 10.1	27.204 ¹⁹⁰	18.65 ²⁴⁸	64.83 ⁴⁸	51.41 ²⁴⁷	31.239 ²⁴¹	53.94 ⁹¹
20.0	27.354 ¹⁵⁰	21.33 ²⁶⁸	65.22 ³⁹	54.00 ²⁵⁹	31.449 ²¹⁰	54.86 ⁹²
30.0	27.462 ¹⁰⁸	24.10 ²⁷⁷	65.52 ³⁰	56.67 ²⁶⁷	31.623 ¹⁷⁴	55.77 ⁹¹
June 9.0	27.526 ⁶⁴	26.87 ²⁷⁷	65.73 ²¹	59.35 ²⁶⁸	31.758 ¹³⁵	56.68 ⁹¹
19.0	27.546 ²⁰	29.55 ²⁶⁸	65.84 ¹¹	62.00 ²⁶⁵	31.851 ⁹³	57.56 ⁸⁸
28.9	27.521 ²⁵	32.08 ²⁵³	65.85 ¹	64.54 ²⁵⁴	31.901 ⁵⁰	58.40 ⁸⁴
July 8.9	27.452 ⁶⁹	34.38 ²³⁰	65.75 ¹⁰	66.90 ²³⁶	31.907 ⁶	59.18 ⁷⁸
18.9	27.342 ¹¹⁰	36.40 ²⁰²	65.56 ¹⁹	69.03 ²¹³	31.869 ³⁸	59.88 ⁷⁰
28.8	27.194 ¹⁴⁸	38.08 ¹⁶⁸	65.28 ²⁸	70.86 ¹⁸³	31.789 ⁸⁰	60.47 ⁵⁹
Aug. 7.8	27.012 ¹⁸²	39.38 ¹³⁰	64.93 ³⁵	72.33 ¹⁴⁷	31.671 ¹¹⁸	60.92 ⁴⁵
17.8	26.803 ²⁰⁹	40.27 ⁸⁹	64.50 ⁴³	73.39 ¹⁰⁶	31.521 ¹⁵⁰	61.22 ³⁰
27.8	26.572 ²³¹	40.74 ⁴⁷	64.02 ⁴⁸	74.01 ⁶²	31.345 ¹⁷⁶	61.35 ¹³
Sept. 6.7	26.329 ²⁴³	40.76 ²	63.52 ⁵⁰	74.14 ¹³	31.153 ¹⁹²	61.30 ⁵
16.7	26.082 ²⁴⁷	40.33 ⁴³	63.01 ⁵¹	73.80 ³⁴	30.956 ¹⁹⁷	61.08 ²²
26.7	25.841 ²⁴¹	39.44 ⁸⁹	62.52 ⁴⁹	72.99 ⁸¹	30.765 ¹⁹¹	60.69 ³⁹
Oct. 6.7	25.617 ²²⁴	38.11 ¹³³	62.08 ⁴⁴	71.72 ¹²⁷	30.591 ¹⁷⁴	60.15 ⁵⁴
16.6	25.420 ¹⁹⁷	36.34 ¹⁷⁷	61.70 ³⁸	70.06 ¹⁶⁶	30.446 ¹⁴⁵	59.48 ⁶⁷
26.6	25.260 ¹⁶⁰	34.17 ²¹⁷	61.41 ²⁹	68.05 ²⁰¹	30.341 ¹⁰⁵	58.73 ⁷⁵
Nov. 5.6	25.145 ¹¹⁵	31.62 ²⁵⁵	61.22 ¹⁹	65.79 ²²⁶	30.284 ⁵⁷	57.96 ⁷⁷
15.5	25.083 ⁶²	28.75 ²⁸⁷	61.15 ⁷	63.37 ²⁴²	30.283 ¹	57.20 ⁷⁶
25.5	25.077 ⁶	25.61 ³¹⁴	61.21 ⁶	60.88 ²⁴⁹	30.340 ⁵⁷	56.49 ⁷¹
Dec 5.5	25.130 ⁵³	22.28 ³³³	61.40 ¹⁹	58.42 ²⁴⁶	30.456 ¹¹⁶	55.89 ⁶⁰
15.5	25.242 ¹¹²	18.85 ³⁴³	61.71 ³¹	56.10 ²³²	30.630 ¹⁷⁴	55.43 ⁴⁶
25.4	25.410 ¹⁶⁸	15.42 ³⁴³	62.14 ⁴³	53.98 ²¹²	30.856 ²²⁶	55.15 ²⁸
35.4	25.630 ²²⁰	12.10 ³³²	62.67 ⁵³	52.16 ¹⁸²	31.129 ²⁷³	55.05 ¹⁰
Mean Place	25.519	29.70	61.472	52.45	29.761	50.25
Sec δ , Tau δ	1.288	+0.811	2.778	-2.591	1.209	-0.679
L α , L δ	-0.02	-0.1	+0.06	-0.1	+0.02	-0.1
ω α , ω δ	+0.02	-0.9	-0.06	-0.9	-0.01	-0.9
Authority and Catalogue No.	A. E.	1018	A. E.	1019	A. E.	1023

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ζ Arct.		κ Ophiuchi.		30 Ophiuchi.	
	3.06	K 5	3.42	K 0	5.00	K 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 16 52	[°] ['] 55 52	^h ^m 16 54	[°] ['] 9 28	^h ^m 16 57	[°] ['] 4 06
Jan. 1.4	^s 35.435	34.54	^s 13.318	66.38	^s 13.349	57.51
11.4	35.826	33.39	13.544	64.16	13.581	59.07
21.4	36.268	32.53	13.799	62.05	13.843	60.61
31.3	36.747	31.98	14.077	60.12	14.125	62.06
Feb. 10.3	37.252	31.75	14.369	58.45	14.421	63.38
20.3	37.771	31.83	14.669	57.09	14.725	64.51
Mar. 1.3	38.294	32.21	14.971	56.09	15.031	65.41
11.2	38.812	32.87	15.270	55.49	15.332	66.06
21.2	39.317	33.80	15.560	55.28	15.625	66.44
31.2	39.802	34.97	15.838	55.46	15.909	66.55
Apr. 10.2	40.262	36.33	16.100	56.00	16.177	66.41
20.1	40.689	37.90	16.343	56.87	16.428	66.05
30.1	41.079	39.64	16.565	58.01	16.658	65.49
May 10.1	41.425	41.51	16.761	59.36	16.866	64.79
20.0	41.722	43.47	16.930	60.86	17.048	63.99
30.0	41.965	45.51	17.070	62.45	17.200	63.12
June 9.0	42.148	47.58	17.176	64.07	17.320	62.22
19.0	42.269	49.62	17.247	65.67	17.407	61.34
28.9	42.324	51.60	17.283	67.19	17.457	60.49
July 8.9	42.315	53.46	17.282	68.60	17.470	59.71
18.9	42.239	55.14	17.245	69.86	17.446	59.01
28.9	42.102	56.61	17.173	70.94	17.386	58.40
Aug. 7.8	41.909	57.81	17.070	71.82	17.295	57.89
17.8	41.669	58.70	16.939	72.49	17.174	57.49
27.8	41.392	59.24	16.787	72.93	17.032	57.21
Sept. 6.7	41.092	59.40	16.620	73.12	16.875	57.05
16.7	40.783	59.19	16.447	73.07	16.710	57.01
26.7	40.481	58.60	16.277	72.76	16.548	57.11
Oct. 6.7	40.204	57.66	16.119	72.19	16.398	57.34
16.6	39.967	56.39	15.983	71.36	16.270	57.72
26.6	39.785	54.87	15.877	70.27	16.173	58.26
Nov. 5.6	39.671	53.14	15.809	68.93	16.114	58.98
15.6	39.635	51.28	15.786	67.33	16.100	59.87
25.5	39.682	49.39	15.809	65.52	16.132	60.93
Dec. 5.5	39.814	47.53	15.882	63.51	16.215	62.16
15.5	40.028	45.78	16.003	61.37	16.345	63.53
25.4	40.319	44.21	16.170	59.14	16.519	65.00
35.4	40.679	42.88	16.376	56.90	16.734	66.54
Mean Place	39.275	41.56	15.490	68.81	15.620	57.03
Sec δ, Tan δ	1.783	-1.476	1.014	+0.167	1.003	-0.072
L α, L δ	+0.04	-0.1	0.00	-0.1	0.00	-0.1
ω α, ω δ	-0.03	-1.0	0.00	-1.0	0.00	-1.0
Authority and Catalogue No.	A. E.	1031	A. E.	1034		1035

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ϵ Herculis.		η Ophiuchi <i>m</i> .		ζ Draconis.	
	3.92	A 0	2.63	A 2	3.22	B 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 16 57	[°] ['] 31 01	^h ^m 17 06	[°] ['] 15 38	^h ^m 17 08	[°] ['] 65 47
Jan. 1.4	29.777 ^s ₂₂₂	47.84 ["] ₃₀₃	12.351 ^s ₂₃₉	12.84 ["] ₉₀	31.29 ^s ₂₈	64.03 ["] ₃₅₇
11.4	29.999 ^s ₂₅₉	44.81 ["] ₂₈₁	12.590 ^s ₂₆₉	13.74 ["] ₉₅	31.57 ^s ₃₇	60.46 ["] ₃₂₉
21.4	30.258 ^s ₂₈₉	42.00 ["] ₂₄₉	12.859 ^s ₂₉₁	14.69 ["] ₉₆	31.94 ^s ₄₄	57.17 ["] ₂₈₇
31.4	30.547 ^s	39.51 ["]	13.150 ^s	15.65 ["]	32.38 ^s	54.30 ["]
Feb. 10.3	30.856 ^s ₃₀₉	37.42 ["] ₂₀₉	13.457 ^s ₃₀₇	16.57 ["] ₉₂	32.88 ^s ₅₀	51.94 ["] ₂₃₆
20.3	31.178 ^s ₃₂₂	35.82 ["] ₁₆₀	13.772 ^s ₃₁₅	17.42 ["] ₈₅	33.43 ^s ₅₅	50.17 ["] ₁₇₇
Mar. 1.3	31.504 ^s ₃₂₆	34.74 ["] ₁₀₈	14.090 ^s ₃₁₈	18.16 ["] ₇₄	34.01 ^s ₅₈	49.05 ["] ₁₁₂
11.2	31.829 ^s ₃₂₅	34.23 ["] ₅₁	14.406 ^s ₃₁₆	18.77 ["] ₆₁	34.59 ^s ₅₈	48.61 ["] ₄₄
21.2	32.146 ^s ₃₁₇	34.28 ["] ₅	14.715 ^s ₃₀₉	19.23 ["] ₄₆	35.17 ^s ₅₈	48.85 ["] ₂₄
31.2	32.448 ^s ₃₀₂	34.87 ["] ₅₉	15.014 ^s ₂₉₉	19.53 ["] ₃₀	35.72 ^s ₅₅	49.75 ["] ₉₀
Apr. 10.2	32.732 ^s ₂₈₄	35.97 ["] ₁₁₀	15.300 ^s ₂₈₆	19.69 ["] ₁₆	36.23 ^s ₅₁	51.26 ["] ₁₅₁
20.1	32.992 ^s ₂₆₀	37.51 ["] ₁₅₄	15.570 ^s ₂₇₀	19.72 ["] ₃	36.68 ^s ₄₅	53.30 ["] ₂₀₄
30.1	33.224 ^s ₂₃₂	39.43 ["] ₁₉₂	15.820 ^s ₂₅₀	19.65 ["] ₇	37.07 ^s ₃₉	55.78 ["] ₂₄₈
May 10.1	33.425 ^s ₂₀₁	41.64 ["] ₂₂₁	16.047 ^s ₂₂₇	19.48 ["] ₁₇	37.38 ^s ₃₁	58.62 ["] ₂₈₄
20.1	33.592 ^s ₁₆₇	44.06 ["] ₂₄₂	16.248 ^s ₂₀₁	19.26 ["] ₂₂	37.61 ^s ₂₃	61.70 ["] ₃₀₈
30.0	33.723 ^s ₁₃₁	46.59 ["] ₂₅₃	16.419 ^s ₁₇₁	19.01 ["] ₂₅	37.75 ^s ₁₄	64.92 ["] ₃₂₂
June 9.0	33.814 ^s ₉₁	49.16 ["] ₂₅₇	16.558 ^s ₁₃₉	18.75 ["] ₂₆	37.81 ^s ₆	68.17 ["] ₃₂₅
19.0	33.865 ^s ₅₁	51.68 ["] ₂₅₂	16.661 ^s ₁₀₃	18.49 ["] ₂₆	37.77 ^s ₄	71.37 ["] ₃₂₀
28.9	33.875 ^s ₁₀	54.08 ["] ₂₄₀	16.727 ^s ₆₆	18.25 ["] ₂₄	37.65 ^s ₁₂	74.42 ["] ₃₀₅
July 8.9	33.843 ^s ₃₂	56.29 ["] ₂₂₁	16.754 ^s ₂₇	18.04 ["] ₂₁	37.44 ^s ₂₁	77.23 ["] ₂₈₁
18.9	33.771 ^s ₇₂	58.27 ["] ₁₉₈	16.741 ^s ₁₃	17.87 ["] ₁₇	37.15 ^s ₂₉	79.73 ["] ₂₅₀
28.9	33.661 ^s ₁₁₀	59.96 ["] ₁₆₉	16.690 ^s ₅₁	17.72 ["] ₁₅	36.79 ^s ₃₆	81.87 ["] ₂₁₄
Aug. 7.8	33.517 ^s ₁₄₄	61.32 ["] ₁₃₆	16.605 ^s ₈₅	17.59 ["] ₁₃	36.37 ^s ₄₂	83.59 ["] ₁₇₂
17.8	33.343 ^s ₁₇₄	62.33 ["] ₁₀₁	16.488 ^s ₁₁₇	17.48 ["] ₁₁	35.90 ^s ₄₇	84.85 ["] ₁₂₆
27.8	33.147 ^s ₁₉₆	62.95 ["] ₆₂	16.346 ^s ₁₄₂	17.39 ["] ₉	35.38 ^s ₅₂	85.62 ["] ₇₇
Sept. 6.8	32.935 ^s ₂₁₂	65.17 ["] ₂₂	16.187 ^s ₁₅₉	17.30 ["] ₉	34.84 ^s ₅₄	85.88 ["] ₂₆
16.7	32.717 ^s ₂₁₈	62.99 ["] ₁₈	16.019 ^s ₁₆₈	17.23 ["] ₇	34.29 ^s ₅₅	85.62 ["] ₂₆
26.7	32.502 ^s ₂₁₅	62.39 ["] ₆₀	15.852 ^s ₁₆₇	17.16 ["] ₇	33.74 ^s ₅₅	84.83 ["] ₇₉
Oct. 6.7	32.299 ^s ₂₀₃	61.38 ["] ₁₀₁	15.696 ^s ₁₅₆	17.13 ["] ₃	33.21 ^s ₅₃	83.52 ["] ₁₃₁
16.6	32.118 ^s ₁₈₁	59.96 ["] ₁₄₂	15.562 ^s ₁₃₄	17.14 ["] ₁	32.72 ^s ₄₉	81.71 ["] ₁₈₁
26.6	31.970 ^s ₁₄₈	58.16 ["] ₁₈₀	15.459 ^s ₁₀₃	17.21 ["] ₇	32.28 ^s ₄₄	79.43 ["] ₂₂₈
Nov. 5.6	31.863 ^s ₁₀₇	55.99 ["] ₂₁₇	15.395 ^s ₆₄	17.36 ["] ₁₅	31.91 ^s ₃₇	76.71 ["] ₂₇₂
15.6	31.802 ^s ₆₁	53.50 ["] ₂₄₉	15.377 ^s ₁₈	17.61 ["] ₂₅	31.62 ^s ₂₉	73.60 ["] ₃₁₁
25.5	31.793 ^s ₉	50.72 ["] ₂₇₈	15.408 ^s ₃₁	17.97 ["] ₃₆	31.42 ^s ₂₀	70.19 ["] ₃₄₁
Dec. 5.5	31.837 ^s ₄₄	47.74 ["] ₂₉₈	15.490 ^s ₈₂	18.47 ["] ₅₀	31.32 ^s ₁₀	66.54 ["] ₃₆₅
15.5	31.936 ^s ₉₉	44.62 ["] ₃₁₂	15.622 ^s ₁₃₂	19.09 ["] ₆₂	31.33 ^s ₁	62.76 ["] ₃₇₈
25.5	32.087 ^s ₁₅₁	41.46 ["] ₃₁₆	15.801 ^s ₁₇₉	19.84 ["] ₇₅	31.44 ^s ₁₁	58.97 ["] ₃₇₉
35.4	32.284 ^s ₁₉₇	38.35 ["] ₃₁₁	16.020 ^s ₂₁₉	20.69 ["] ₈₅	31.66 ^s ₂₂	55.27 ["] ₃₇₀
Mean Place	31.953	53.13	14.783	13.64	34.384	71.57
Sec δ , Tan δ	1.167	+0.602	1.038	-0.280	2.440	+2.225
L α , L δ	-0.02	-0.1	+0.01	-0.1	-0.06	-0.1
ω α , ω δ	+0.01	-1.0	0.00	-1.0	+0.03	-1.0
Authority and Catalogue No.	A. E.	1036	A. E.	1040	A. E.	1042

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α^1 Herculis.		δ Herculis.		π Herculis.	
	Var.	M b	3.16	A 2	3.36	K 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 17 ^m 11	^h 14 ^m 28	^h 17 ^m 12	^h 24 ^m 55	^h 17 ^m 12	^h 36 ^m 53
Jan. 1.4	19.563 ^s ₂₀₈	13.32 ^s ₂₄₂	02.136 ^s ₂₀₇	18.22 ^s ₂₈₄	29.978 ^s ₂₀₈	16.00 ^s ₃₂₂
11.4	19.771 ^s ₂₄₂	10.90 ^s ₂₂₉	02.343 ^s ₂₄₂	15.38 ^s ₂₆₇	30.186 ^s ₂₅₁	12.78 ^s ₂₉₉
21.4	20.013 ^s ₂₆₇	08.61 ^s ₂₀₈	02.585 ^s ₂₇₁	12.71 ^s ₂₄₀	30.437 ^s ₂₈₅	09.79 ^s ₂₆₇
31.4	20.280 ^s ₂₈₆	06.53 ^s ₁₈₁	02.856 ^s ₂₉₂	10.31 ^s ₂₀₅	30.722 ^s ₃₁₂	07.12 ^s ₂₂₅
Feb. 10.3	20.566 ^s ₂₉₆	04.72 ^s ₁₄₅	03.148 ^s ₃₀₅	08.26 ^s ₁₆₂	31.034 ^s ₃₂₉	04.87 ^s ₁₇₅
20.3	20.862 ^s ₃₀₂	03.27 ^s ₁₀₅	03.453 ^s ₃₁₃	06.64 ^s ₁₁₃	31.363 ^s ₃₃₈	03.12 ^s ₁₁₉
Mar. 1.3	21.164 ^s ₃₀₁	02.22 ^s ₆₂	03.766 ^s ₃₁₂	05.51 ^s ₆₂	31.701 ^s ₃₄₀	01.93 ^s ₅₉
11.2	21.465 ^s ₂₉₆	01.60 ^s ₁₈	04.078 ^s ₃₀₇	04.89 ^s ₁₀	32.041 ^s ₃₃₅	01.34 ^s ₅₈
21.2	21.761 ^s ₂₈₆	01.42 ^s ₂₆	04.385 ^s ₂₉₇	04.79 ^s ₄₂	32.376 ^s ₃₂₃	01.34 ^s ₁₇₃
31.2	22.047 ^s ₂₇₂	01.68 ^s ₆₆	04.682 ^s ₂₈₂	05.21 ^s ₈₉	32.699 ^s ₃₀₅	01.92 ^s ₁₆₂
Apr. 10.2	22.319 ^s ₂₅₅	02.34 ^s ₁₀₂	04.964 ^s ₂₆₂	06.10 ^s ₁₃₂	33.004 ^s ₂₈₁	03.05 ^s ₂₀₃
20.1	22.574 ^s ₂₃₄	03.36 ^s ₁₃₄	05.226 ^s ₂₁₂	07.42 ^s ₁₆₉	33.285 ^s ₂₅₃	04.67 ^s ₂₃₅
30.1	22.808 ^s ₂₁₀	04.70 ^s ₁₅₈	05.464 ^s ₁₈₁	09.11 ^s ₂₁₉	33.538 ^s ₁₈₄	06.70 ^s ₂₆₀
May 10.1	23.018 ^s ₁₈₃	06.28 ^s ₁₇₆	05.676 ^s ₁₄₈	11.09 ^s ₂₃₁	33.759 ^s ₁₄₅	09.05 ^s ₂₇₄
20.1	23.201 ^s ₁₅₂	08.04 ^s ₁₈₇	05.857 ^s ₁₁₁	13.28 ^s ₇₃	33.943 ^s ₁₀₁	11.65 ^s ₂₇₉
30.0	23.353 ^s ₈₃	09.91 ^s ₁₉₀	06.005 ^s ₃₃	15.59 ^s ₂₀₉	34.088 ^s ₅₈	14.39 ^s ₂₆₅
June 9.0	23.472 ^s ₄₅	11.82 ^s ₁₇₀	06.116 ^s ₇	17.96 ^s ₂₃₇	34.189 ^s ₃₃	17.18 ^s ₂₄₇
19.0	23.555 ^s ₈	13.72 ^s ₁₅₃	06.189 ^s ₄₇	20.30 ^s ₁₈₉	34.247 ^s ₇₆	19.94 ^s ₂₂₃
28.9	23.600 ^s ₆₇	15.54 ^s ₁₃₂	06.222 ^s ₈₅	22.56 ^s ₁₆₄	34.260 ^s ₁₁₈	22.59 ^s ₁₉₃
July 8.9	23.608 ^s ₁₀₁	17.24 ^s ₁₁₀	06.215 ^s ₁₂₀	24.65 ^s ₁₃₆	34.227 ^s ₁₅₆	25.06 ^s ₁₂₁
18.9	23.578 ^s ₁₃₀	18.77 ^s ₈₅	06.168 ^s ₁₇₅	26.54 ^s ₇₀	34.151 ^s ₂₁₅	27.29 ^s ₃₈
28.9	23.511 ^s ₁₇₂	20.09 ^s ₂₉	06.083 ^s ₁₉₃	28.18 ^s ₃₄	34.033 ^s ₂₃₃	29.22 ^s ₇
Aug. 7.8	23.410 ^s ₁₈₀	21.19 ^s ₁	05.963 ^s ₂₀₁	29.54 ^s ₃	33.877 ^s ₂₄₃	30.80 ^s ₅₂
17.8	23.280 ^s ₁₇₁	22.04 ^s ₆₀	05.812 ^s ₁₉₁	30.57 ^s ₇₉	33.688 ^s ₂₁₁	32.01 ^s ₉₆
27.8	23.125 ^s ₁₅₁	22.61 ^s ₉₀	05.637 ^s ₁₇₂	31.27 ^s ₁₅₂	33.473 ^s ₁₇₉	32.81 ^s ₁₄₀
Sept. 6.8	22.953 ^s ₈₈	22.90 ^s ₁₇₆	05.444 ^s ₆₂	31.61 ^s ₂₁₈	33.240 ^s ₉₂	33.19 ^s ₂₅₈
16.7	22.773 ^s ₂₀₀	22.91 ^s ₂₀₀	05.243 ^s ₁₃	31.58 ^s ₂₆₉	33.997 ^s ₁₇	33.12 ^s ₃₁₂
26.7	22.593 ^s ₁₀₀	22.62 ^s ₂₄₄	05.041 ^s ₁₈₄	31.17 ^s ₂₈₈	32.755 ^s ₁₈₁	32.60 ^s ₃₂₉
Oct. 6.7	22.422 ^s ₁₄₇	22.02 ^s ₂₄₄	04.850 ^s ₁₃₈	30.38 ^s ₂₉₁	32.523 ^s ₂₈₈	31.64 ^s ₃₃₄
16.6	22.271 ^s ₁₈₈	21.12 ^s ₁₈₈	04.678 ^s ₁₈₄	29.22 ^s ₂₈₈	32.312 ^s ₁₈₁	30.23 ^s ₃₂₉
26.6	22.148 ^s ₁₄₇	19.93 ^s ₂₄₄	04.535 ^s ₁₈₄	27.70 ^s ₂₈₈	32.133 ^s ₁₈₁	28.41 ^s ₃₂₉
Nov. 5.6	22.060 ^s ₁₄₇	18.45 ^s ₂₄₄	04.429 ^s ₁₈₄	25.83 ^s ₂₈₈	31.993 ^s ₁₈₁	26.19 ^s ₃₂₉
15.6	22.016 ^s ₁₄₇	16.69 ^s ₂₄₄	04.367 ^s ₁₈₄	23.65 ^s ₂₈₈	31.901 ^s ₁₈₁	23.61 ^s ₃₂₉
25.5	22.019 ^s ₁₄₇	14.69 ^s ₂₄₄	04.354 ^s ₁₈₄	21.19 ^s ₂₈₈	31.862 ^s ₁₈₁	20.72 ^s ₃₂₉
Dec. 5.5	22.071 ^s ₁₄₇	12.50 ^s ₂₄₄	04.392 ^s ₁₈₄	18.50 ^s ₂₈₈	31.879 ^s ₁₈₁	17.60 ^s ₃₂₉
15.5	22.171 ^s ₁₄₇	10.15 ^s ₂₄₄	04.481 ^s ₁₈₄	15.66 ^s ₂₈₈	31.953 ^s ₁₈₁	14.33 ^s ₃₂₉
25.5	22.318 ^s ₁₄₇	07.71 ^s ₂₄₄	04.619 ^s ₁₈₄	12.75 ^s ₂₈₈	32.082 ^s ₁₈₁	10.99 ^s ₃₂₉
35.4	22.506 ^s ₁₄₇	05.27 ^s ₂₄₄	04.803 ^s ₁₈₄	09.87 ^s ₂₈₈	32.263 ^s ₁₈₁	07.70 ^s ₃₂₉
Mean Place	21.759	16.62	04.331	22.69	32.234	21.63
Sec δ , Tan δ	1.033	+0.258	1.103	+0.465	1.250	+0.751
L α , L δ	-0.01	-0.1	-0.01	-0.1	-0.02	-0.1
ω α , ω δ	0.00	-1.0	+0.01	-1.0	+0.01	-1.0
Authority and Catalogue No.	A. E.	1045	A. E.	1046	A. E.	1047

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	θ Ophiuchi. 3.57 B 3		β Arae. 2.80 K 2		σ Ophiuchi. 4.44 K 0	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
Mean Solar Date	^h 17	^m 17	^h 17	^m 19	^h 17	^m 22
	^s 17	^s 55	^s 17	^s 27	^s 17	^s 22
Jan 1.4	32.484 ²⁴⁴	43.41 ³²	14.661 ³⁵³	45.10 ¹³⁷	54.142 ²⁰⁴	63.91 ¹⁹¹
11.4	32.728 ²⁷⁷	43.73 ⁴¹	15.014 ⁴⁰⁷	43.73 ¹¹³	54.346 ²³⁶	62.00 ¹⁸⁵
21.4	33.005 ³⁰¹	44.14 ⁴⁹	15.421 ⁴⁵⁰	42.60 ⁸⁵	54.582 ²⁶⁰	60.15 ¹⁷⁰
31.4	33.306 ³⁰¹	44.63	15.871	41.75	54.842	58.45
Fel 10.3	33.626 ³²⁰	45.16 ⁵³	16.353 ⁴⁸²	41.18 ⁵⁷	55.121 ²⁷⁹	56.94 ¹⁵¹
20.3	33.957 ³³¹	45.70 ⁵⁴	16.857 ⁵⁰⁴	40.90 ²⁸	55.412 ²⁹¹	55.69 ¹²⁵
Mar. 1.3	34.293 ³³⁶	46.23 ⁵³	17.371 ⁵¹⁴	40.91 ¹	55.709 ²⁹⁷	54.74 ⁹⁵
11.3	34.629 ³³⁶	46.73 ⁵⁰	17.887 ⁵¹⁶	41.20 ²⁹	56.007 ²⁹⁸	54.13 ⁶¹
21.2	34.959 ³³⁰	47.18 ⁴⁵	18.397 ⁵¹⁰	41.75 ⁵⁵	56.301 ²⁹⁴	53.87 ²⁶
31.2	35.281 ³²²	47.58 ⁴⁰	18.895 ⁴⁹⁸	42.54 ⁷⁹	56.588 ²⁸⁷	53.96 ⁹
Apr. 10.2	35.591 ³¹⁰	47.92 ³⁴	19.372 ⁴⁷⁷	43.57 ¹⁰³	56.864 ²⁷⁶	54.37 ⁴¹
20.1	35.885 ²⁹⁴	48.21 ²⁹	19.824 ⁴⁵²	44.81 ¹²⁴	57.126 ²⁶²	55.07 ⁷⁰
30.1	36.160 ²⁷⁵	48.48 ²⁷	20.244 ⁴²⁰	46.24 ¹⁴³	57.370 ²⁴⁴	56.03 ⁹⁶
May 10.1	36.412 ²⁵²	48.72 ²⁴	20.625 ³⁸¹	47.84 ¹⁶⁰	57.592 ²²²	57.19 ¹¹⁶
20.1	36.637 ²²⁵	48.95 ²³	20.960 ³³⁵	49.58 ¹⁷⁴	57.789 ¹⁹⁷	58.49 ¹³⁰
30.0	36.831 ¹⁹⁴	49.18 ²³	21.244 ²⁸⁴	51.44 ¹⁸⁶	57.958 ¹⁶⁹	59.88 ¹³⁹
June 9.0	36.991 ¹⁶⁰	49.43 ²⁵	21.471 ²²⁷	53.38 ¹⁹⁴	58.095 ¹³⁷	61.31 ¹⁴³
19.0	37.113 ¹²²	49.70 ²⁷	21.636 ¹⁶⁵	55.35 ¹⁹⁷	58.198 ¹⁰³	62.72 ¹⁴¹
29.0	37.195 ⁸²	49.98 ²⁸	21.735 ⁹⁹	57.31 ¹⁹⁶	58.263 ⁶⁵	64.09 ¹³⁷
July 8.9	37.234 ¹⁹	50.27 ²⁹	21.767 ³²	59.21 ¹⁹⁰	58.290 ²⁷	65.35 ¹²⁶
18.9	37.231 ³	50.55 ²⁸	21.732 ³⁵	60.99 ¹⁷⁸	58.280 ¹⁰	66.50 ¹¹⁵
28.9	37.186 ⁴⁵	50.82 ²⁷	21.631 ¹⁰¹	62.59 ¹⁶⁰	58.232 ⁴⁸	67.50 ¹⁰⁰
Aug. 7.8	37.103 ⁸³	51.06 ²⁴	21.470 ¹⁶¹	63.97 ¹³⁸	58.149 ⁸³	68.33 ⁸³
17.8	36.985 ¹¹⁸	51.25 ¹⁹	21.256 ²¹⁴	65.08 ¹¹¹	58.035 ¹¹⁴	68.98 ⁶⁵
27.8	36.838 ¹⁴⁷	51.38 ¹³	20.998 ²⁵⁸	65.88 ⁸⁰	57.896 ¹³⁹	69.45 ⁴⁷
Sept. 6.8	36.670 ¹⁶⁸	51.43 ⁵	20.710 ²⁸⁸	66.33 ⁴⁵	57.737 ¹⁵⁹	69.71 ²⁶
16.7	36.492 ¹⁷⁸	51.40 ³	20.405 ³⁰⁵	66.40 ⁷	57.569 ¹⁶⁸	69.78 ⁷
26.7	36.313 ¹⁷⁹	51.28 ¹²	20.099 ³⁰⁶	66.10 ³⁰	57.398 ¹⁷¹	69.64 ¹⁴
Oct. 6.7	36.144 ¹⁶⁹	51.10 ¹⁸	19.809 ²⁹⁰	65.43 ⁶⁷	57.236 ¹⁶²	69.28 ³⁶
16.7	35.997 ¹⁴⁷	50.86 ²⁴	19.552 ²⁵⁷	64.41 ¹⁰²	57.091 ¹⁴⁵	68.70 ⁵⁸
26.6	35.880 ¹¹⁷	50.59 ²⁷	19.343 ²⁰⁹	63.10 ¹³¹	56.973 ¹¹⁸	67.90 ⁸⁰
Nov. 5.6	35.804 ⁷⁶	50.32 ²⁷	19.195 ¹⁴⁸	61.54 ¹⁵⁶	56.889 ⁸⁴	66.87 ¹⁰³
15.6	35.776 ²⁸	50.08 ²⁴	19.121 ⁷⁴	59.80 ¹⁷⁴	56.847 ⁴²	65.64 ¹²³
25.5	35.799 ²³	49.89 ¹⁹	19.126 ⁵	57.96 ¹⁸⁴	56.850 ³	64.20 ¹⁴⁴
Dec. 5.5	35.875 ¹²⁹	49.79 ¹⁰	19.213 ⁸⁷	56.10 ¹⁸⁶	56.901 ⁵¹	62.57 ¹⁶³
15.5	36.004 ¹	49.80 ¹	19.382 ¹⁶⁹	54.28 ¹⁸²	56.999 ⁹⁸	60.80 ¹⁷⁷
25.5	36.183 ¹⁷⁹	49.92 ¹²	19.630 ²⁴⁸	52.59 ¹⁶⁹	57.143 ¹⁴⁴	58.95 ¹⁸⁵
35.4	36.406 ²²³	50.16 ²⁴	19.948 ³¹⁸	51.07 ¹⁵²	57.327 ¹⁸⁴	57.05 ¹⁹⁰
Mean Place	35.105	44.74	18.575	49.49	56.404	66.22
Sec δ , Tan δ	1.103	-0.465	1.764	-1.453	1.003	+0.073
L α , L δ	+0.01	-0.1	+0.04	-0.1	0.00	-0.1
ω α , ω δ	-0.01	-1.0	-0.02	-1.0	0.00	-1.0
Authority and Catalogue No.	A. E.	1052	A. E.	1055		1060

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	v Scorpii.		α Ara.		λ Scorpii.	
	2.80	B 3	2.97	B 3 p	1.71	B 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 17 25	[°] ['] 37 14	^h ^m 17 26	[°] ['] 49 49	^h ^m 17 28	[°] ['] 37 03
Jan. 1.4	49.021 ^s	21.53 ^s	12.804 ^s	11.61 ^s	40.039 ^s	08.35 ^s
11.4	49.285 ²⁶⁴	21.08 ⁴⁵	13.115 ³¹¹	10.47 ¹¹⁴	40.299 ²⁶⁰	07.90 ⁴⁵
21.4	49.586 ³⁰¹	20.79 ²⁹	13.474 ³⁵⁹	09.54 ⁹³	40.598 ²⁹⁹	07.60 ³⁰
31.4	49.918 ³³²	20.65 ¹⁴	13.871 ³⁹⁷	08.85 ⁶⁹	40.928 ³³⁰	07.44 ¹⁶
Feb. 10.3	50.272 ³⁵⁴	20.65	14.297 ⁴²⁶	08.39 ⁴⁶	41.281 ³⁵³	07.42 ²
20.3	50.641 ³⁶⁹	20.78 ¹³	14.742 ⁴⁴⁵	08.17 ²²	41.648 ³⁶⁷	07.53 ¹¹
Mar. 1.3	51.018 ³⁷⁷	21.02 ²⁴	15.198 ⁴⁵⁶	08.18 ¹	42.024 ³⁷⁶	07.74 ²¹
11.3	51.396 ³⁷⁸	21.35 ³³	15.656 ⁴⁵⁸	08.41 ²³	42.402 ³⁷⁸	08.05 ³¹
21.2	51.772 ³⁷⁶	21.77 ⁴²	16.111 ⁴⁵⁵	08.84 ⁴³	42.776 ³⁷⁴	08.44 ³⁹
31.2	52.139 ³⁶⁷	22.26 ⁴⁹	16.557 ⁴⁴⁶	09.48 ⁶⁴	43.143 ³⁶⁷	08.90 ⁴⁶
Apr. 10.2	52.494 ³⁵⁵	22.83 ⁵⁷	16.986 ⁴²⁹	10.31 ⁸³	43.498 ³⁵⁵	09.43 ⁵³
20.1	52.832 ³³⁸	23.46 ⁶³	17.394 ⁴⁰⁸	11.32 ¹⁰¹	43.837 ³³⁹	10.03 ⁶⁰
30.1	53.150 ³¹⁸	24.15 ⁶⁹	17.776 ³⁸²	12.48 ¹¹⁶	44.156 ³¹⁹	10.69 ⁶⁶
May 10.1	53.441 ²⁹¹	24.91 ⁷⁶	18.126 ³⁵⁰	13.78 ¹³⁰	44.449 ²⁹³	11.42 ⁷³
20.1	53.703 ²⁶²	25.74 ⁸³	18.437 ³¹¹	15.22 ¹⁴⁴	44.713 ²⁶⁴	12.22 ⁸⁰
30.0	53.929 ²²⁶	26.63 ⁸⁹	18.704 ²⁶⁷	16.76 ¹⁵⁴	44.943 ²³⁰	13.07 ⁸⁵
June 9.0	54.117 ¹⁸⁸	27.56 ⁹³	18.922 ²¹⁸	18.38 ¹⁶²	45.133 ¹⁹⁰	13.98 ⁹¹
19.0	54.261 ¹⁴⁴	28.51 ⁹⁵	19.086 ¹⁶⁴	20.04 ¹⁶⁶	45.280 ¹⁴⁷	14.92 ⁹⁴
29.0	54.359 ⁹⁸	29.49 ⁹⁸	19.193 ¹⁰⁷	21.71 ¹⁶⁷	45.381 ¹⁰¹	15.88 ⁹⁶
July 8.9	54.408 ⁴⁹	30.46 ⁹⁷	19.240 ⁴⁷	23.34 ¹⁶³	45.433 ⁵²	16.84 ⁹⁶
18.9	54.408	31.38 ⁹²	19.226 ¹⁴	24.88 ¹⁵⁴	45.437 ⁴	17.76 ⁹²
28.9	54.360 ⁴⁸	32.23 ⁸⁵	19.154 ⁷²	26.29 ¹⁴¹	45.392 ⁴⁵	18.60 ⁸⁴
Aug. 7.8	54.267 ⁹³	32.97 ⁷⁴	19.027 ¹²⁷	27.51 ¹²²	45.301 ⁹¹	19.35 ⁷⁵
17.8	54.134 ¹³³	33.58 ⁶¹	18.852 ¹⁷⁵	28.51 ¹⁰⁰	45.170 ¹³¹	19.96 ⁶¹
27.8	53.967 ¹⁶⁷	34.02 ⁴⁴	18.636 ²¹⁶	29.25 ⁷⁴	45.005 ¹⁶⁵	20.42 ⁴⁶
Sept. 6.8	53.776 ¹⁹¹	34.28 ²⁶	18.591 ²⁴⁵	29.69 ⁴⁴	44.815 ¹⁹⁰	20.70 ²⁸
16.7	53.570 ²⁰⁶	34.34 ⁶	18.129 ²⁶²	29.81 ¹²	44.610 ²⁰⁵	20.78 ⁸
26.7	53.362 ²⁰⁸	34.19 ¹⁵	17.864 ²⁶⁵	29.61 ²⁰	44.403 ²⁰⁷	20.65 ¹³
Oct. 6.7	53.165 ¹⁹⁷	33.85 ³⁴	17.612 ²⁵²	29.09 ⁵²	44.204 ¹⁹⁹	20.33 ³²
16.7	52.990 ¹⁷⁵	33.32 ⁵³	17.386 ²²⁶	28.27 ⁸²	44.028 ¹⁷⁶	19.83 ⁵⁰
26.6	52.849 ¹⁴¹	32.64 ⁶⁸	17.202 ¹⁸⁴	27.18 ¹⁰⁹	43.885 ¹⁴³	19.17 ⁶⁶
Nov. 5.6	52.752 ⁹⁷	31.85 ⁷⁹	17.071 ¹³¹	25.88 ¹³⁰	43.787 ⁹⁸	18.40 ⁷⁷
15.6	52.708 ⁴⁴	30.99 ⁸⁶	17.004 ⁶⁷	24.42 ¹⁴⁶	43.740 ⁴⁷	17.55 ⁸⁵
25.5	52.721 ¹³	30.11 ⁸⁸	17.007 ³	22.87 ¹⁵⁵	43.750 ¹⁰	16.68 ⁸⁷
Dec. 5.5	52.794 ⁷³	29.26 ⁸⁵	17.083 ⁷⁶	21.30 ¹⁵⁷	43.819 ⁶⁹	15.84 ⁸⁴
15.5	52.926 ¹³²	28.48 ⁷⁸	17.231 ¹⁴⁸	19.78 ¹⁵²	43.948 ¹²⁹	15.06 ⁷⁸
25.5	53.116 ¹⁹⁰	27.81 ⁶⁷	17.448 ²¹⁷	18.36 ¹⁴²	44.133 ¹⁸⁵	14.38 ⁶⁸
35.4	53.356 ²⁴⁰	27.27 ⁵⁴	17.728 ²⁸⁰	17.09 ¹²⁷	44.370 ²³⁷	13.83 ⁵⁵
Mean Place	51.986	23.59	16.343	14.84	43.006	10.19
Sec δ, Tan δ	1.256	-0.760	1.550	-1.184	1.253	-0.755
L α, L δ	+0.02	-0.1	+0.03	-0.1	+0.02	-0.1
ω α, ω δ	-0.01	-1.0	-0.01	-1.0	-0.01	-1.0
Authority and Catalogue No.	A. N.	1063	A. E.	1064	A. E.	1066

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Draconis.		α Ophiuchi.		θ Scorpii.	
	2.99	G 0	2.14	A 5	2.04	F 0
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 17 28 ^s	[°] ['] 52 20	^h ^m 17 31	[°] ['] 12 36	^h ^m 17 32	[°] ['] 42 57
Jan. 1.5	45.654 ²⁰⁰	68.56 ³⁵⁵	33.188 ¹⁹¹	37.21 ²³¹	05.324 ²⁷⁵	10.87 ⁸¹
11.4	45.854 ²⁶⁰	65.01 ³³³	33.379 ²²⁶	34.90 ²²¹	05.599 ³¹⁸	10.06 ⁶⁴
21.4	46.114 ³¹¹	61.68 ²⁹⁷	33.605 ²⁵²	32.69 ²⁰³	05.917 ³⁵³	09.42 ⁴⁵
31.4	46.425 ³⁵⁴	58.71 ²⁵¹	33.857 ²⁷³	30.66 ¹⁷⁷	06.270 ³⁷⁸	08.97 ²⁸
Feb. 10.3	46.779 ³⁸⁵	56.20 ¹⁹⁸	34.130 ²⁸⁸	28.89 ¹⁴⁵	06.648 ³⁹⁵	08.69 ¹⁰
20.3	47.164 ⁴⁰⁶	54.22 ¹³⁷	34.418 ²⁹⁶	27.44 ¹⁰⁸	07.043 ⁴⁰⁵	08.59 ⁶
Mar. 1.3	47.570 ⁴¹⁵	52.85 ⁷²	34.714 ²⁹⁸	26.36 ⁶⁶	07.448 ⁴⁰⁹	08.65 ²¹
11.3	47.985 ⁴¹³	52.13 ⁶	35.012 ²⁹⁷	25.70 ²⁴	07.857 ⁴⁰⁶	08.86 ³⁶
21.2	48.398 ⁴⁰²	52.07 ⁶⁰	35.309 ²⁹⁰	25.46 ¹⁹	08.263 ³⁹⁹	09.22 ⁴⁹
31.2	48.800 ³⁸¹	52.67 ¹²⁰	35.599 ²⁸¹	25.65 ⁵⁹	08.662 ³⁸⁶	09.71 ⁶¹
Apr. 10.2	49.181 ³⁵²	53.87 ¹⁷⁵	35.880 ²⁶⁶	26.24 ⁹⁴	09.048 ³⁶⁹	10.32 ⁷⁴
20.2	49.533 ³¹⁴	55.62 ²²³	36.146 ²⁴⁷	27.18 ¹²⁶	09.417 ³⁴⁷	11.06 ⁸⁵
30.1	49.847 ²⁷¹	57.85 ²⁶¹	36.393 ²²⁶	28.44 ¹⁵¹	09.764 ³²⁰	11.91 ⁹⁶
May 10.1	50.118 ²²¹	60.46 ²⁹⁰	36.619 ²⁰¹	29.95 ¹⁶⁹	10.084 ²⁸⁷	12.87 ¹⁰⁶
20.1	50.339 ¹⁶⁷	63.36 ³⁰⁹	36.820 ¹⁷²	31.64 ¹⁸²	10.371 ²⁵⁰	13.93 ¹¹⁵
30.0	50.506 ¹⁰⁸	66.45 ³¹⁷	36.992 ¹³⁹	33.46 ¹⁸⁷	10.621 ²⁰⁷	15.08 ¹²²
June 9.0	50.614 ⁵¹	69.62 ³¹⁶	37.131 ¹⁰³	35.33 ¹⁸⁶	10.828 ¹⁶⁰	16.30 ¹²⁷
19.0	50.665 ¹⁰	72.78 ³⁰⁶	37.234 ⁶⁶	37.19 ¹⁸⁰	10.988 ¹¹⁰	17.57 ¹²⁸
29.0	50.655 ⁷⁰	75.84 ²⁸⁸	37.300 ²⁷	38.99 ¹⁶⁹	11.098 ⁵⁶	18.85 ¹²⁷
July 8.9	50.585 ¹²⁷	78.72 ²⁶³	37.327 ¹²	40.68 ¹⁵⁴	11.154 ²	20.12 ¹²²
18.9	50.458 ¹⁸¹	81.35 ²³⁰	37.315 ⁵¹	42.22 ¹³⁵	11.156 ⁵⁰	21.34 ¹¹³
28.9	50.277 ²³⁰	83.65 ¹⁹⁴	37.264 ⁸⁶	43.57 ¹¹³	11.106 ⁹⁹	22.47 ¹⁰⁰
Aug. 7.9	50.047 ²⁷³	85.59 ¹⁵²	37.178 ¹¹⁹	44.70 ⁹¹	11.007 ¹⁴⁴	23.47 ⁸³
17.8	49.774 ³⁰⁸	87.11 ¹⁰⁶	37.059 ¹⁴⁵	45.61 ⁶⁵	10.863 ¹⁸²	24.30 ⁶²
27.8	49.466 ³³²	88.17 ⁵⁸	36.914 ¹⁶⁶	46.26 ³⁸	10.681 ²⁰⁹	24.92 ³⁹
Sept. 6.8	49.134 ³⁴⁷	88.75 ⁹	36.748 ¹⁷⁷	46.64 ¹⁰	10.472 ²²⁶	25.31 ¹⁴
16.7	48.787 ³⁴⁹	88.84 ⁴³	36.571 ¹⁸²	46.74 ¹⁸	10.246 ²²⁹	25.45 ¹²
26.7	48.438 ³⁴⁰	88.41 ⁹³	36.389 ¹⁷⁴	46.56 ⁴⁷	10.017 ²²¹	25.33 ³⁸
Oct. 6.7	48.098 ³¹⁸	87.48 ¹⁴⁴	36.215 ¹⁵⁷	46.09 ⁷⁶	09.796 ¹⁹⁷	24.95 ⁶³
16.7	47.780 ²⁸⁴	86.04 ¹⁹²	36.058 ¹³²	45.33 ¹⁰⁴	09.599 ¹⁶¹	24.32 ⁸³
26.6	47.496 ²³⁹	84.12 ²³⁷	35.926 ⁹⁹	44.29 ¹³²	09.438 ¹¹⁵	23.49 ¹⁰¹
Nov. 5.6	47.257 ¹⁸³	81.75 ²⁷⁷	35.827 ⁵⁸	42.97 ¹⁵⁹	09.323 ⁵⁹	22.48 ¹¹²
15.6	47.074 ¹²¹	78.98 ³¹³	35.769 ¹³	41.38 ¹⁸³	09.264 ²	21.36 ¹¹⁸
25.6	46.953 ⁵²	75.85 ³⁴⁰	35.756 ³⁴	39.55 ²⁰³	09.266 ⁶⁷	20.18 ¹¹⁹
Dec. 5.5	46.901 ¹⁹	72.45 ³⁵⁹	35.790 ⁸²	37.52 ²¹⁹	09.333 ¹³¹	18.99 ¹¹⁴
15.5	46.920 ⁹¹	68.86 ³⁶⁶	35.872 ¹²⁸	35.33 ²²⁹	09.464 ¹⁹³	17.85 ¹⁰⁵
25.5	47.011 ¹⁶⁰	65.20 ³⁶³	36.000 ¹⁷⁰	33.04 ²³²	09.657 ²⁴⁸	16.80 ⁹¹
35.4	47.171	61.57	36.170	30.72	09.905	15.89
Mean Place	48.213	74.71	35.428	40.51	08.524	12.96
Sec δ , Tan δ	1.637	+1.296	1.025	+0.224	1.366	-0.931
L a , L δ	-0.03	-0.1	-0.01	-0.1	+0.02	-0.1
ω a , ω δ	+0.01	-1.0	0.00	-1.0	-0.01	-1.0
Authority and Catalogue No.	A. E.	1067	A. E.	1070	A. E.	1071

APPARENT PLACES OF STARS, 1928. 389 AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	♏ Scorpii.		♐ Pavonis.		♑ Ophiuchi.	
	2.51	B 2	3.58	K 0	2.94	K 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 17 37	^m 38° 59'	^h 17 38	^m 64° 41'	^h 17 39	^m 4° 35'
Jan. 1.5	27.202 ^s	38.87 ["]	34.73 ^s	26.81 ["]	52.549 ^s	43.30 ["]
11.4	27.457 ²⁵⁵	38.25 ⁶²	35.13 ⁴⁰	24.84 ¹⁹⁷	52.738 ¹⁸⁹	41.42 ¹⁸⁸
21.4	27.754 ²⁹⁷	37.78 ⁴⁷	35.61 ⁴⁸	23.11 ¹⁷³	52.960 ²²²	39.60 ¹⁸²
31.4	28.084 ³³⁰	37.45 ³³	36.15 ⁵⁴	21.68 ¹⁴³	53.208 ²⁴⁸	37.91 ¹⁶⁹
Feb. 10.3	28.438 ³⁵⁴	37.27 ¹⁸	36.75 ⁶⁰	20.56 ¹¹²	53.477 ²⁶⁹	36.41 ¹⁵⁰
20.3	28.809 ³⁷¹	37.22 ⁵	37.38 ⁶³	19.78 ⁷⁸	53.760 ²⁸³	35.17 ¹²⁴
Mar. 1.3	29.191 ³⁸²	37.30 ⁸	38.04 ⁶⁶	19.35 ⁴³	54.052 ²⁹²	34.23 ⁹⁴
11.3	29.577 ³⁸⁶	37.49 ¹⁹	38.70 ⁶⁶	19.27 ⁸	54.348 ²⁹⁶	33.63 ⁶⁰
21.2	29.961 ³⁸⁴	37.78 ²⁹	39.37 ⁶⁷	19.53 ²⁶	54.644 ²⁹⁶	33.38 ²⁵
31.2	30.340 ³⁷⁹	38.16 ³⁸	40.03 ⁶⁶	20.12 ⁵⁹	54.934 ²⁹⁰	33.48 ¹⁰
Apr. 10.2	30.708 ³⁶⁸	38.63 ⁴⁷	40.66 ⁶³	21.03 ⁹¹	55.216 ²⁸²	33.92 ⁴⁴
20.2	31.061 ³⁵³	39.20 ⁵⁷	41.27 ⁶¹	22.24 ¹²¹	55.486 ²⁷⁰	34.66 ⁷⁴
30.1	31.394 ³³³	39.86 ⁶⁶	41.83 ⁵⁶	23.73 ¹⁴⁹	55.740 ²⁵⁴	35.66 ¹⁰⁰
May 10.1	31.703 ³⁰⁹	40.60 ⁷⁴	42.35 ⁵²	25.47 ¹⁷⁴	55.974 ²³⁴	36.87 ¹²¹
20.1	31.982 ²⁷⁹	41.43 ⁸³	42.81 ⁴⁶	27.42 ¹⁹⁵	56.184 ²¹⁰	38.23 ¹³⁶
30.0	32.226 ²⁴⁴	42.34 ⁹¹	43.20 ³⁹	29.55 ²¹³	56.367 ¹⁸³	39.69 ¹⁴⁶
June 9.0	32.431 ²⁰⁵	43.32 ⁹⁸	43.51 ³¹	31.82 ²²⁷	56.519 ¹⁵²	41.19 ¹⁵⁰
19.0	32.591 ¹⁶⁰	44.34 ¹⁰²	43.75 ²⁴	34.17 ²³⁵	56.637 ¹¹⁸	42.69 ¹⁵⁰
29.0	32.704 ¹¹³	45.40 ¹⁰⁶	43.90 ¹⁵	36.54 ²³⁷	56.718 ⁸¹	44.14 ¹⁴⁵
July 8.9	32.766 ⁶²	46.46 ¹⁰⁶	43.95 ⁵	38.88 ²³⁴	56.759 ⁴¹	45.49 ¹³⁵
18.9	32.778 ¹²	47.49 ¹⁰³	43.92 ³	41.11 ²²³	56.762 ³	46.71 ¹²²
28.9	32.739 ³⁹	48.45 ⁹⁶	43.80 ¹²	43.17 ²⁰⁶	56.725 ³⁷	47.78 ¹⁰⁷
Aug. 7.9	32.652 ⁸⁷	49.31 ⁸⁶	43.59 ²¹	45.00 ¹⁸³	56.652 ⁷³	48.69 ⁹¹
17.8	32.523 ¹²⁹	50.04 ⁷³	43.31 ²⁸	46.53 ¹⁵³	56.546 ¹⁰⁶	49.41 ⁷²
27.8	32.357 ¹⁶⁶	50.60 ⁵⁶	42.97 ³⁴	47.71 ¹¹⁸	56.412 ¹³⁴	49.94 ⁵³
Sept. 6.8	32.164 ¹⁹³	50.97 ³⁷	42.58 ³⁹	48.49 ⁷⁸	56.257 ¹⁵⁵	50.26 ³²
16.7	31.954 ²¹⁰	51.13 ¹⁶	42.16 ⁴²	48.83 ³⁴	56.089 ¹⁶⁸	50.38 ¹²
26.7	31.740 ²¹⁴	51.06 ⁷	41.74 ⁴²	48.72 ¹¹	55.916 ¹⁷³	50.28 ¹⁰
Oct. 6.7	31.533 ²⁰⁷	50.77 ²⁹	41.33 ⁴¹	48.16 ⁵⁶	55.748 ¹⁶⁸	49.97 ³¹
16.7	31.347 ¹⁸⁶	50.28 ⁴⁹	40.95 ³⁸	47.17 ⁹⁹	55.596 ¹⁵²	49.43 ⁵⁴
26.6	31.193 ¹⁵⁴	49.61 ⁶⁷	40.63 ³²	45.77 ¹⁴⁰	55.468 ¹²⁸	48.67 ⁷⁶
Nov. 5.6	31.083 ¹¹⁰	48.80 ⁸¹	40.39 ²⁴	44.04 ¹⁷³	55.372 ⁹⁶	47.70 ⁹⁷
15.6	31.025 ⁵⁸	47.89 ⁹¹	40.23 ¹⁶	42.03 ²⁰¹	55.316 ⁵⁶	46.50 ¹²⁰
25.6	31.024 ¹	46.93 ⁹⁶	40.17 ⁶	39.83 ²²⁰	55.304 ¹²	45.10 ¹⁴⁰
Dec. 5.5	31.084 ⁶⁰	45.97 ⁹⁶	40.22 ⁵	37.53 ²³⁰	55.339 ³⁵	43.53 ¹⁵⁷
15.5	31.204 ¹²⁰	45.05 ⁹²	40.37 ¹⁵	35.21 ²³²	55.420 ⁸¹	41.81 ¹⁷²
25.5	31.383 ¹⁷⁹	44.22 ⁸³	40.63 ²⁶	32.96 ²²⁵	55.546 ¹²⁶	39.98 ¹⁸³
35.4	31.613 ²³⁰	43.51 ⁷¹	40.98 ³⁵	30.86 ²¹⁰	55.715 ¹⁶⁹	38.10 ¹⁸⁸
Mean Place	30.251	40.15	39.745	29.88	54.838	46.03
Sec δ, Tan δ	1.287	-0.810	2.339	-2.115	1.003	+0.080
L α, L δ	+0.02	0.0	+0.05	0.0	0.00	0.0
ω α, ω δ	-0.01	-1.0	-0.01	-1.0	0.00	-1.0
Authority and Catalogue No.	A. N.	1075	A. E.	1079	A. E.	1080

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ι Scorpii.		μ Herculis.		δ Herculis.	
	3.14	F 5 p	3.48	G 5	5.48	F 5 p.
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 17 42	^m 40 05	^h 17 43	^m 27 45	^h 17 52	^m 26 03
Jan. 1.5	29.695 ²⁵³	61.47 ⁷²	36.053 ¹⁷³	38.24 ²⁹⁵	28.502 ¹⁶⁵	33.43 ²⁸⁶
11.4	29.948 ²⁹⁶	60.75 ⁵⁷	36.226 ²¹³	35.29 ²⁸¹	28.667 ²⁰⁴	30.57 ²⁷³
21.4	30.244 ³³⁰	60.18 ⁴²	36.439 ²⁴⁶	32.48 ²⁵⁶	28.871 ²³⁸	27.84 ²⁵⁰
31.4	30.574 ³⁵⁵	59.76 ²⁸	36.685 ²⁷³	29.92 ²²³	29.109 ²⁶⁴	25.34 ²¹⁹
Feb. 10.4	30.929 ³⁷⁴	59.48 ¹⁴	36.958 ²⁹²	27.69 ¹⁸⁰	29.373 ²⁸⁶	23.15 ¹⁷⁹
20.3	31.303 ³⁸⁶	59.34 ¹	37.250 ³⁰⁶	25.89 ¹³³	29.659 ³⁰⁰	21.36 ¹³²
Mar. 1.3	31.689 ³⁹¹	59.33 ¹²	37.556 ³¹²	24.56 ⁸¹	29.959 ³⁰⁷	20.04 ⁸²
11.3	32.080 ³⁹⁰	59.45 ²³	37.868 ³¹³	23.75 ²⁶	30.266 ³¹⁰	19.22 ²⁹
21.2	32.470 ³⁸⁶	59.68 ³⁴	38.181 ³⁰⁹	23.49 ²⁸	30.576 ³⁰⁷	18.93 ²⁵
31.2	32.856 ³⁷⁶	60.02 ⁴⁴	38.490 ²⁹⁸	23.77 ⁷⁹	30.883 ³⁰⁰	19.18 ⁷⁵
Apr. 10.2	33.232 ³⁶¹	60.46 ⁵⁴	38.788 ²⁸³	24.56 ¹²⁶	31.183 ²⁸⁶	19.93 ¹²¹
20.2	33.593 ³⁴³	61.00 ⁶⁵	39.071 ²⁶³	25.82 ¹⁶⁶	31.469 ²⁶⁸	21.14 ¹⁶²
30.1	33.936 ³¹⁷	61.65 ⁷⁵	39.334 ²³⁹	27.48 ²⁰⁰	31.737 ²⁴⁵	22.76 ¹⁹⁵
May 10.1	34.253 ²⁸⁷	62.40 ⁸⁴	39.573 ²¹⁰	29.48 ²²⁶	31.982 ²¹⁸	24.71 ²²¹
20.1	34.540 ²⁵³	63.24 ⁹³	39.783 ¹⁷⁷	31.74 ²⁴³	32.200 ¹⁸⁶	26.92 ²³⁹
30.1	34.793 ²¹³	64.17 ¹⁰²	39.960 ¹⁴⁰	34.17 ²⁵³	32.386 ¹⁵¹	29.31 ²⁴⁹
June 9.0	35.006 ¹⁶⁸	65.19 ¹⁰⁷	40.100 ¹⁰¹	36.70 ²⁵³	32.537 ¹¹¹	31.80 ²⁵¹
19.0	35.174 ¹²⁰	66.26 ¹¹¹	40.201 ⁵⁹	39.23 ²⁴⁷	32.648 ⁷²	34.31 ²⁴⁶
29.0	35.294 ⁶⁹	67.37 ¹¹¹	40.260 ¹⁶	41.70 ²³⁵	32.720 ²⁷	36.77 ²³⁴
July 8.9	35.363 ¹⁶	68.48 ¹⁰⁹	40.276 ²⁷	44.05 ²¹⁵	32.747 ¹⁵	39.11 ²¹⁷
18.0	35.379 ³⁵	69.57 ¹⁰³	40.249 ⁶⁹	46.20 ¹⁹²	32.732 ⁵⁸	41.28 ¹⁹⁴
28.9	35.344 ⁸⁴	70.60 ⁹³	40.180 ¹⁰⁸	48.12 ¹⁶³	32.674 ⁹⁷	43.22 ¹⁶⁷
Aug. 7.9	35.260 ¹²⁹	71.53 ⁷⁹	40.072 ¹⁴³	49.75 ¹³²	32.577 ¹³⁴	44.89 ¹³⁷
17.8	35.131 ¹⁶⁰	72.32 ⁶³	39.929 ¹⁷³	51.07 ⁹⁷	32.443 ¹⁶⁵	46.26 ¹⁰³
27.8	34.905 ¹⁹⁵	72.95 ⁴²	39.756 ¹⁹⁵	52.04 ⁶⁰	32.278 ¹⁸⁷	47.29 ⁶⁸
Sept. 6.8	34.770 ²¹²	73.37 ²⁰	39.561 ²¹⁰	52.64 ²²	32.091 ²⁰³	47.97 ³¹
16.8	34.558 ²¹⁹	73.57 ³	39.351 ²¹⁵	52.86 ¹⁸	31.888 ²¹⁰	48.28 ⁸
26.7	34.339 ²¹²	73.54 ²⁶	39.136 ²¹⁰	52.68 ⁵⁸	31.678 ²⁰⁶	48.20 ⁴⁶
Oct. 6.7	34.127 ¹⁹²	73.28 ⁴⁸	38.926 ¹⁹⁵	52.10 ⁹⁸	31.472 ¹⁹³	47.74 ⁸⁶
16.7	33.935 ¹⁶⁰	72.80 ⁶⁸	38.731 ¹⁷¹	51.12 ¹³⁷	31.279 ¹⁷⁰	46.88 ¹²⁴
26.6	33.775 ¹¹⁷	72.12 ⁸³	38.560 ¹³⁷	49.75 ¹⁷⁴	31.109 ¹³⁸	45.64 ¹⁶⁰
Nov. 5.6	33.658 ⁶⁵	71.29 ⁹⁵	38.423 ⁹⁶	48.01 ²⁰⁹	30.971 ⁹⁹	44.04 ¹⁹⁵
15.6	33.593 ⁷	70.34 ¹⁰¹	38.327 ⁵⁰	45.92 ²⁴⁰	30.872 ⁵⁴	42.09 ²²⁶
25.6	33.586 ⁵⁴	69.33 ¹⁰²	38.277 ¹	43.52 ²⁶⁶	30.818 ⁶	39.83 ²⁵³
Dec. 5.5	33.640 ¹¹⁵	68.31 ⁹⁹	38.276 ⁵⁰	40.86 ²⁸⁵	30.812 ⁴⁴	37.30 ²⁷³
15.5	33.755 ¹⁷⁴	67.32 ⁹²	38.326 ¹⁰¹	38.01 ²⁹⁶	30.856 ⁹⁴	34.57 ²⁸⁴
25.5	33.929 ²²⁷	66.40 ⁸¹	38.427 ¹⁴⁸	35.05 ²⁹⁸	30.950 ¹⁴⁰	31.73 ²⁸⁷
35.5	33.156	65.59	38.575	32.07	31.090	28.86
Mean Place	32.794	62.41	38.319	42.68	30.775	37.68
Sec δ , Tan δ	1.307	-0.842	1.130	+0.526	1.113	+0.489
L α , L δ	+0.02	0.0	-0.01	0.0	-0.01	0.0
ω α , ω δ	0.00	-1.0	0.00	-1.0	0.00	-1.0
Authority and Catalogue No.	A. N.	1081	A. E.	1084		1091

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Draconis. 2.42 K 5		γ Ophiuchi. 3.50 K 0		γ Sagittarii. 3.07 K 0	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 17 ^m 54	[°] 51 ['] 29	^h 17 ^m 55	[°] 9 ['] 45	^h 18 ^m 01	[°] 30 ['] 25
Jan. 1.5	53.324 ¹⁵⁹	43.20 ³⁵⁶	01.257 ¹⁸⁷	60.22 ¹⁰³	08.093 ²¹¹	36.47 ²⁴
11.4	53.483 ²²⁰	39.64 ³³⁹	01.444 ²²²	61.25 ¹⁰⁴	08.304 ²⁵⁰	36.23 ¹⁷
21.4	53.703 ²⁷⁴	36.25 ³¹⁰	01.666 ²⁴⁹	62.29 ⁹⁹	08.554 ²⁸²	36.06 ¹⁰
31.4	53.977 ³²⁰	33.15 ²⁷⁰	01.915 ²⁷¹	63.28 ⁹⁰	08.836 ³⁰⁷	35.96 ³
Feb. 10.4	54.297 ³⁵⁷	30.45 ²¹⁹	02.186 ²⁸⁶	64.18 ⁷⁸	09.143 ³²⁵	35.93 ¹
20.3	54.654 ³⁸⁴	28.26 ¹⁶²	02.472 ²⁹⁷	64.96 ⁶⁰	09.468 ³³⁹	35.94 ⁴
Mar. 1.3	55.038 ⁴⁰⁰	26.64 ⁹⁹	02.769 ³⁰³	65.56 ⁴¹	09.807 ³⁴⁶	35.98 ⁷
11.3	55.438 ⁴⁰⁶	25.65 ³³	03.072 ³⁰⁴	65.97 ²⁰	10.153 ³⁴⁹	36.05 ⁷
21.2	55.844 ⁴⁰²	25.32 ³³	03.376 ³⁰²	66.17 ¹	10.502 ³⁴⁷	36.12 ⁸
31.2	56.246 ³⁸⁹	25.65 ⁹⁵	03.678 ²⁹⁶	66.16 ²⁰	10.849 ³⁴²	36.20 ⁹
Apr. 10.2	56.635 ³⁶⁶	26.60 ¹⁵²	03.974 ²⁸⁷	65.96 ³⁹	11.191 ³³²	36.29 ¹¹
20.2	57.001 ³³⁶	28.12 ²⁰⁴	04.261 ²⁷³	65.57 ⁵³	11.523 ³¹⁸	36.40 ¹⁴
30.1	57.337 ²⁹⁶	30.16 ²⁴⁶	04.534 ²⁵⁶	65.04 ⁶⁵	11.841 ³⁰⁰	36.54 ¹⁸
May 10.1	57.633 ²⁵³	32.62 ²⁷⁹	04.790 ²³⁴	64.39 ⁷³	12.141 ²⁷⁵	36.72 ²⁴
20.1	57.886 ²⁰²	35.41 ³⁰³	05.024 ²⁰⁸	63.66 ⁷⁷	12.416 ²⁴⁶	36.96 ³¹
30.1	58.088 ¹⁴⁷	38.44 ³¹⁷	05.232 ¹⁷⁸	62.89 ⁷⁷	12.662 ²¹²	37.27 ³⁷
June 9.0	58.235 ⁸⁹	41.61 ³²²	05.410 ¹⁴⁴	62.12 ⁷⁴	12.874 ¹⁷⁴	37.64 ⁴⁴
19.0	58.324 ²⁹	44.83 ³¹⁶	05.554 ¹⁰⁶	61.38 ⁷⁰	13.048 ¹³¹	38.08 ⁵¹
29.0	58.353 ³¹	47.99 ³⁰³	05.660 ⁶⁷	60.68 ⁶²	13.179 ⁸⁵	38.59 ⁵⁵
July 8.9	58.322 ⁹⁰	51.02 ²⁸²	05.727 ²⁶	60.06 ⁵³	13.264 ³⁸	39.14 ⁵⁹
18.9	58.232 ¹⁴⁷	53.84 ²⁵⁴	05.753 ¹⁶	58.53 ⁴⁵	13.302 ¹⁰	39.73 ⁶⁰
28.9	58.085 ²⁰⁰	56.38 ²²¹	05.737 ⁵⁵	59.08 ³⁵	13.292 ⁵⁵	40.33 ⁵⁸
Aug. 7.9	57.885 ²⁴⁶	58.59 ¹⁸¹	05.682 ⁹⁰	58.73 ²⁶	13.237 ⁹⁷	40.91 ⁵²
17.8	57.639 ²⁸⁶	60.40 ¹³⁹	05.592 ¹²²	58.47 ¹⁸	13.140 ¹³⁴	41.43 ⁴⁶
27.8	57.353 ³¹⁶	61.79 ⁹²	05.470 ¹⁴⁶	58.29 ⁹	13.006 ¹⁶³	41.89 ³⁵
Sept. 6.8	57.037 ³³⁶	62.71 ⁴⁴	05.324 ¹⁶²	58.20 ¹	12.843 ¹⁸²	42.24 ²⁴
16.8	56.701 ³⁴⁵	63.15 ⁷	05.162 ¹⁶⁹	58.19 ⁶	12.661 ¹⁹²	42.48 ¹¹
26.7	56.356 ³⁴¹	63.08 ⁵⁸	04.993 ¹⁶⁶	58.25 ¹⁴	12.469 ¹⁸⁹	42.59 ³
Oct. 6.7	56.015 ³²⁶	62.50 ¹⁰⁹	04.827 ¹⁵³	58.39 ²²	12.280 ¹⁷⁵	42.56 ⁶
16.7	55.689 ²⁹⁸	61.41 ¹⁵⁸	04.674 ¹³⁰	58.61 ³¹	12.105 ¹⁵⁰	42.40 ²⁷
26.6	55.391 ²⁵⁸	59.83 ²⁰⁶	04.544 ⁹⁸	58.92 ⁴¹	11.955 ¹¹⁴	42.13 ³⁷
Nov. 5.6	55.133 ²⁰⁹	57.77 ²⁵¹	04.446 ⁵⁹	59.33 ⁵¹	11.841 ⁷⁰	41.76 ⁴⁴
15.6	54.924 ¹⁵¹	55.26 ²⁸⁹	04.387 ¹⁵	59.84 ⁶³	11.771 ²⁰	41.32 ⁴⁷
25.6	54.773 ⁸⁷	52.37 ³²⁰	04.372 ³²	60.47 ⁷⁵	11.751 ³³	40.85 ⁴⁶
Dec. 5.5	54.686 ¹⁹	49.17 ³⁴⁵	04.404 ⁷⁹	61.22 ⁸⁵	11.784 ⁸⁶	40.39 ⁴³
15.5	54.667 ⁵¹	45.72 ³⁵⁸	04.483 ¹²⁵	62.07 ⁹³	11.870 ¹³⁹	39.96 ³⁸
25.5	54.718 ¹¹⁹	42.14 ³⁵⁹	04.608 ¹⁶⁷	63.00 ¹⁰⁰	12.009 ¹⁸⁸	39.58 ³¹
35.5	54.837	38.55	04.775	64.00	12.197	39.27
Mean Place	55.928	48.30	03.690	58.09	10.907	35.29
Sec δ , Tan δ	1.606	+1.257	1.015	-0.172	1.160	-0.587
L a , L δ	-0.03	0.0	0.00	0.0	+0.02	0.0
ω a , ω δ	0.00	-1.0	0.00	-1.0	0.00	-1.0
Authority and Catalogue No.	A. E.	1095	A. E.	1096	A. E.	1103

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	72 Ophiuchi.		μ Sagittarii.		η Sagittarii.	
	3.73	A 3	4.01	B 8 p	3.16	M b
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 18 ^m 03	^h 9 ^m 32	^h 18 ^m 09	^h 21 ^m 04	^h 18 ^m 12	^h 36 ^m 47
Jan. 1.5	53.802 ^s 163	65.27 ["] 208	24.779 ^s 188	47.17 ["] 28	42.269 ^s 210	07.21 ["] 69
11.5	53.965 ^s 198	63.19 ["] 201	24.967 ^s 224	47.45 ["] 32	42.479 ^s 253	06.52 ["] 61
21.4	54.163 ^s 227	61.18 ["] 187	25.191 ^s 255	47.77 ["] 33	42.732 ^s 289	05.91 ["] 51
31.4	54.390 ^s	59.31 ["]	25.446 ^s	48.10 ["]	43.021 ^s	05.40 ["]
Feb. 10.4	54.642 ^s 252	57.66 ["] 165	25.724 ^s 278	48.42 ["] 32	43.339 ^s 318	04.98 ["] 42
20.3	54.911 ^s 269	56.29 ["] 137	26.021 ^s 297	48.71 ["] 29	43.679 ^s 340	04.65 ["] 33
Mar. 1.3	55.194 ^s 283	55.25 ["] 104	26.331 ^s 310	48.93 ["] 22	44.036 ^s 357	04.41 ["] 24
11.3	55.485 ^s 291	54.59 ["] 66	26.649 ^s 318	49.08 ["] 15	44.402 ^s 366	04.24 ["] 17
21.3	55.780 ^s 295	54.32 ["] 27	26.971 ^s 322	49.13 ["] 5	44.774 ^s 372	04.15 ["] 9
31.2	56.073 ^s 293	54.45 ["] 13	27.293 ^s 322	49.09 ["] 4	45.148 ^s 374	04.13 ["] 2
Apr. 10.2	56.362 ^s 289	54.97 ["] 52	27.612 ^s 319	48.97 ["] 12	45.517 ^s 369	04.20 ["] 7
20.2	56.642 ^s 280	55.83 ["] 86	27.923 ^s 311	48.78 ["] 19	45.878 ^s 361	04.34 ["] 14
30.2	56.908 ^s 266	57.00 ["] 117	28.222 ^s 299	48.54 ["] 24	46.225 ^s 347	04.58 ["] 24
May 10.1	57.157 ^s 249	58.42 ["] 142	28.504 ^s 282	48.28 ["] 26	46.554 ^s 329	04.92 ["] 34
20.1	57.383 ^s 226	60.04 ["] 162	28.766 ^s 262	48.01 ["] 27	46.858 ^s 304	05.37 ["] 45
30.1	57.584 ^s 201	61.78 ["] 174	29.002 ^s 236	47.77 ["] 24	47.132 ^s 274	05.93 ["] 56
June 9.0	57.754 ^s 170	63.58 ["] 180	29.206 ^s 204	47.57 ["] 20	47.369 ^s 237	06.60 ["] 67
19.0	57.889 ^s 135	65.40 ["] 182	29.376 ^s 170	47.42 ["] 15	47.566 ^s 197	07.36 ["] 76
29.0	57.987 ^s 98	67.17 ["] 177	29.506 ^s 130	47.35 ["] 7	47.717 ^s 151	08.20 ["] 84
July 9.0	58.045 ^s 58	68.85 ["] 168	29.593 ^s 87	47.34 ["] 1	47.819 ^s 102	09.10 ["] 90
18.9	58.062 ^s 17	70.39 ["] 154	29.637 ^s 44	47.40 ["] 6	47.870 ^s 51	10.03 ["] 93
28.9	58.039 ^s 23	71.78 ["] 139	29.636 ^s 1	47.51 ["] 11	47.868 ^s 2	10.96 ["] 93
Aug. 7.9	57.977 ^s 62	72.96 ["] 118	29.592 ^s 44	47.66 ["] 15	47.817 ^s 51	11.85 ["] 89
17.9	57.880 ^s 97	73.92 ["] 96	29.509 ^s 83	47.84 ["] 18	47.719 ^s 98	12.67 ["] 82
27.8	57.751 ^s 129	74.66 ["] 74	29.390 ^s 119	48.03 ["] 19	47.580 ^s 139	13.38 ["] 71
Sept. 6.8	57.598 ^s 153	75.15 ["] 49	29.244 ^s 146	48.21 ["] 18	47.409 ^s 171	13.95 ["] 57
16.8	57.428 ^s 170	75.39 ["] 24	29.078 ^s 166	48.36 ["] 15	47.215 ^s 194	14.34 ["] 39
26.7	57.250 ^s 178	75.37 ["] 2	28.902 ^s 176	48.47 ["] 11	47.008 ^s 207	14.54 ["] 20
Oct. 6.7	57.073 ^s 177	75.09 ["] 28	28.726 ^s 176	48.55 ["] 8	46.801 ^s 207	14.54 ["] 20
16.7	56.908 ^s 165	74.55 ["] 54	28.563 ^s 163	48.59 ["] 4	46.607 ^s 194	14.34 ["] 38
26.7	56.763 ^s 145	73.75 ["] 80	28.422 ^s 141	48.60 ["] 1	46.438 ^s 169	13.96 ["] 55
Nov. 5.6	56.648 ^s 115	72.69 ["] 106	28.311 ^s 111	48.60 ["] 0	46.305 ^s 133	13.41 ["] 55
15.6	56.569 ^s 79	71.38 ["] 131	28.241 ^s 70	48.60 ["] 0	46.217 ^s 88	12.73 ["] 68
25.6	56.532 ^s 37	69.84 ["] 154	28.216 ^s 25	48.62 ["] 2	46.180 ^s 37	11.96 ["] 77
Dec. 5.6	56.539 ^s 7	68.10 ["] 174	28.239 ^s 23	48.69 ["] 7	46.199 ^s 19	11.14 ["] 82
15.5	56.592 ^s 53	66.20 ["] 190	28.312 ^s 73	48.81 ["] 12	46.276 ^s 77	10.31 ["] 83
25.5	56.691 ^s 99	64.18 ["] 202	28.433 ^s 121	48.99 ["] 18	46.408 ^s 132	09.50 ["] 81
35.5	56.832 ^s 141	62.11 ["] 207	28.599 ^s 166	49.22 ["] 23	46.593 ^s 185	08.75 ["] 75
Mean Place	56.095	68.75	27.393	44.93	45.276	05.45
Sec δ , Tan δ	1.014	+0.168	1.072	-0.385	1.249	-0.748
L α , L δ	0.00	0.0	+0.01	0.0	+0.02	0.0
ω α , ω δ	0.00	-1.0	0.00	-1.0	0.00	-1.0
Authority and Catalogue No.	A. E.	1105	A. E.	1109	A. N.	1111

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Sagittarii.		η Serpentis.		ϵ Sagittarii.	
	2.84	Ko	3.42	Ko	1.95	Ao
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 18 16	[°] ['] 29 51	^h ^m 18 17	[°] ['] 2 55	^h ^m 18 19	[°] ['] 34 25
Jan. 1.5	20.241 ^s	38.98 ²⁹	32.604 ^s	10.96 ¹³⁸	20.647 ^s	15.22 ⁵⁸
11.5	20.434 ¹⁹³	38.69 ²³	32.763 ¹⁵⁹	12.34 ¹³⁵	20.846 ¹⁹⁹	14.64 ⁵⁸
21.4	20.667 ²³³	38.46 ¹⁸	32.957 ¹⁹⁴	13.69 ¹²⁶	21.086 ²⁴⁰	14.12 ⁵²
31.4	20.934 ²⁶⁷	38.28	33.180 ²²³	14.95	21.362 ²⁷⁶	13.68 ⁴⁴
Feb. 10.4	21.227 ²⁹³	38.15 ¹³	33.427 ²⁴⁷	16.08 ¹¹³	21.668 ³⁰⁶	13.31 ³⁷
20.3	21.541 ³¹⁴	38.05 ¹⁰	33.693 ²⁶⁶	17.03 ⁹⁵	21.995 ³²⁷	13.01 ³⁰
Mar. 1.3	21.870 ³²⁹	37.96 ⁹	33.973 ²⁸⁰	17.75 ⁷²	22.339 ³⁴⁴	12.77 ²⁴
11.3	22.210 ³⁴⁰	37.88 ⁸	34.262 ²⁸⁹	18.21 ⁴⁶	22.694 ³⁵⁵	12.58 ¹⁹
21.3	22.555 ³⁴⁵	37.80 ⁸	34.557 ²⁹⁵	18.39 ¹⁸	23.055 ³⁶¹	12.44 ¹⁴
31.2	22.902 ³⁴⁷	37.73 ⁷	34.853 ²⁹⁶	18.30 ⁹	23.419 ³⁶⁴	12.35 ⁹
Apr. 10.2	23.245 ³⁴³	37.67 ⁶	35.147 ²⁹⁴	17.94 ³⁶	23.780 ³⁶¹	12.31 ⁴
20.2	23.582 ³³⁷	37.62 ⁵	35.434 ²⁸⁷	17.33 ⁶¹	24.133 ³⁵³	12.34 ³
30.2	23.908 ³²⁶	37.61 ¹	35.711 ²⁷⁷	16.51 ⁸²	24.475 ³⁴²	12.44 ¹⁰
May 10.1	24.216 ³⁰⁸	37.65 ⁴	35.974 ²⁶³	15.53 ⁹⁸	24.800 ³²⁵	12.63 ¹⁹
20.1	24.502 ²⁸⁶	37.75 ¹⁰	36.216 ²⁴²	14.43 ¹¹⁰	25.102 ³⁰²	12.92 ²⁹
30.1	24.761 ²⁵⁹	37.92 ¹⁷	36.434 ²¹⁸	13.25 ¹¹⁸	25.375 ²⁷³	13.30 ³⁸
June 9.0	24.988 ²²⁷	38.18 ²⁶	36.624 ¹⁹⁰	12.05 ¹²⁰	25.6.4 ²³⁹	13.79 ⁴⁹
19.0	25.177 ¹⁸⁹	38.52 ³⁴	36.781 ¹⁵⁷	10.86 ¹¹⁹	25.813 ¹⁹⁹	14.38 ⁵⁹
29.0	25.323 ¹⁴⁶	38.94 ⁴²	36.901 ¹²⁰	09.73 ¹¹³	25.969 ¹⁵⁶	15.06 ⁶⁸
July 9.0	25.424 ¹⁰¹	39.41 ⁴⁷	36.982 ⁸¹	08.67 ¹⁰⁶	26.077 ¹⁰⁸	15.81 ⁷⁵
18.9	25.477 ⁵³	39.97 ⁵⁶	37.021 ³⁹	07.73 ⁹⁴	26.135 ⁵⁸	16.61 ⁸⁰
28.9	25.482 ⁵	40.54 ⁵⁷	37.019 ²	06.92 ⁸¹	26.142 ⁷	17.43 ⁸²
Aug. 7.9	25.441 ⁴¹	41.12 ⁵⁸	36.977 ⁴²	06.24 ⁶⁸	26.099 ⁴³	18.23 ⁸⁰
17.9	25.356 ⁸⁵	41.67 ⁵⁵	36.897 ⁸⁰	05.70 ⁵⁴	26.011 ⁸⁸	18.98 ⁷⁵
27.8	25.232 ¹²⁴	42.16 ⁴⁹	36.784 ¹¹³	05.32 ³⁸	25.882 ¹²⁹	19.64 ⁶⁶
Sept. 6.8	25.078 ¹⁵⁴	42.57 ⁴¹	36.644 ¹⁴⁰	05.08 ²⁴	25.720 ¹⁶²	20.19 ⁵⁵
16.8	24.901 ¹⁷⁷	42.88 ³¹	36.486 ¹⁵⁸	04.99 ⁹	25.533 ¹⁸⁷	20.60 ⁴¹
26.7	24.712 ¹⁸⁹	43.07 ¹⁹	36.317 ¹⁶⁹	05.04 ⁵	25.334 ¹⁹⁹	20.83 ²³
Oct. 6.7	24.523 ¹⁸⁹	43.13 ⁶	36.147 ¹⁷⁰	05.24 ²⁰	25.133 ²⁰¹	20.89 ⁶
16.7	24.345 ¹⁷⁸	43.06 ⁷	35.987 ¹⁶⁰	05.59 ³⁵	24.944 ¹⁸⁹	20.77 ¹²
26.7	24.190 ¹⁵⁵	42.87 ¹⁹	35.846 ¹⁴¹	06.08 ⁴⁹	24.777 ¹⁶⁷	20.48 ²⁹
Nov. 5.6	24.067 ¹²³	42.58 ²⁹	35.732 ¹¹⁴	06.73 ⁶⁵	24.644 ¹³³	20.05 ⁴³
15.6	23.985 ⁸²	42.21 ³⁷	35.654 ⁷⁸	07.52 ⁷⁹	24.554 ⁹⁰	19.50 ⁵⁵
25.6	23.951 ³⁴	41.79 ⁴²	35.616 ³⁸	08.46 ⁹⁴	24.514 ⁴⁰	18.86 ⁶⁴
Dec. 5.6	23.969 ¹⁸	41.36 ⁴³	35.622 ⁶	09.54 ¹⁰⁸	24.527 ¹³	18.17 ⁶⁹
15.5	24.039 ⁷⁰	40.94 ⁴²	35.674 ⁵²	10.75 ¹²¹	24.595 ⁶⁸	17.47 ⁷⁰
25.5	24.161 ¹²²	40.55 ³⁹	35.770 ⁹⁶	12.05 ¹³⁰	24.718 ¹²³	16.79 ⁶⁸
35.5	24.330 ¹⁶⁹	40.21 ³⁴	35.907 ¹³⁷	13.38 ¹³³	24.891 ¹⁷³	16.16 ⁶³
Mean Place	23.046	36.66	34.984	07.65	23.582	12.84
Sec δ , Tan δ	1.153	-0.574	1.001	-0.051	1.212	-0.685
L a , L δ	+0.02	0.0	0.00	0.0	+0.02	0.0
ω a , ω δ	0.00	-1.0	0.00	-1.0	0.00	-1.0
Authority and Catalogue No.	A. N.	1114	A. E.	1116	A. E.	1118

(12961)

(NAUTICAL ALMANAC, 1928)

2 D

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	<i>a</i> Telescopii.		<i>z</i> Sagittarii.		<i>a</i> Lyrae.	
	7.76	B3	2.94	K0	0.14	A0
Mean Right Asc.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	18 ^h 21 ^m	46 ^o 00'	18 ^h 23 ^m	25 ^o 27'	18 ^h 34 ^m	38 ^o 42'
Jan. 1.5	34.743	37.24	28.902	49.41	27.557	52.92
11.5	34.965	35.95	29.081	49.37	27.667	49.70
21.4	35.239	34.77	29.298	49.36	27.826	46.55
31.4	35.556	33.71	29.548	49.38	28.030	43.60
Feb. 10.4	35.909	32.80	29.824	49.40	28.273	40.96
20.4	36.289	32.04	30.122	49.41	28.548	38.71
Mar. 1.3	36.690	31.44	30.435	49.40	28.850	36.96
11.3	37.105	31.00	30.759	49.36	29.171	35.75
21.3	37.529	30.72	31.089	49.27	29.506	35.13
31.2	37.955	30.62	31.422	49.13	29.846	35.11
Apr. 10.2	38.378	30.69	31.754	48.95	30.184	35.68
20.2	38.793	30.93	32.080	48.76	30.515	36.82
30.2	39.193	31.35	32.396	48.56	30.831	38.46
May 10.1	39.572	31.95	32.698	48.38	31.125	40.54
20.1	39.924	32.72	32.979	48.23	31.391	42.98
30.1	40.242	33.65	33.234	48.14	31.623	45.70
June 9.1	40.518	34.74	33.458	48.12	31.814	48.60
19.0	40.748	35.96	33.647	48.18	31.963	51.60
29.0	40.926	37.28	33.796	48.32	32.065	54.62
July 9.0	41.048	38.68	33.900	48.54	32.117	57.57
18.9	41.110	40.10	33.959	48.83	32.117	60.37
28.9	41.112	41.50	33.971	49.17	32.068	62.97
Aug 7.9	41.057	42.84	33.938	49.55	31.971	65.31
17.9	40.947	44.06	33.862	49.94	31.829	67.32
27.8	40.789	45.11	33.748	50.31	31.647	68.97
Sept. 6.8	40.593	45.95	33.603	50.65	31.433	70.23
16.8	40.366	46.55	33.435	50.92	31.195	71.07
26.8	40.124	46.87	33.255	51.13	30.942	71.46
Oct. 6.7	39.880	46.90	33.073	51.25	30.685	71.39
16.7	39.648	46.63	32.901	51.28	30.434	70.85
26.7	39.442	46.08	32.749	51.23	30.200	69.84
Nov. 5.6	39.275	45.27	32.628	51.12	29.993	68.38
15.6	39.157	44.24	32.545	50.96	29.822	66.49
25.6	39.096	43.04	32.506	50.78	29.694	64.20
Dec. 5.6	39.099	41.73	32.517	50.60	29.614	61.57
15.5	39.167	40.36	32.577	50.44	29.586	58.65
25.5	39.299	38.97	32.687	50.31	29.613	55.54
35.5	39.491	37.63	32.843	50.23	29.693	52.34
Mean Place	38.135	35.07	31.605	46.45	29.970	56.59
Sec δ , Tan δ	1.440	-1.036	1.108	-0.476	1.282	+0.802
L a , L δ	+0.03	0.0	+0.01	0.0	-0.02	+0.1
ω a , ω δ	+0.01	-1.0	0.00	-1.0	-0.01	-1.0
Authority and Catalogue No.	A. E.	1120	A. N.	1125	A. E.	1134

APPARENT PLACES OF STARS, 1923.

395

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	♄ II Scuti.		♊ Sagittarii.		♋ Pavonis.	
	4.74	F 0	3.30	B 8	4.42	B 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 18 ^m 38	[°] 9 ['] 07	^h 18 ^m 41	[°] 27 ['] 03	^h 18 ^m 45	[°] 62 ['] 16
Jan. 1.5	17.405 ^s	25.73 ["]	06.764 ^s	62.57 ["]	28.37 ^s	24.06 ["]
11.5	17.550 ¹⁴⁵	26.64 ⁹¹	06.926 ¹⁶²	62.34 ²³	28.61 ²⁴	21.79 ²²⁷
21.4	17.732 ¹⁸²	27.54 ⁹⁰	07.129 ²⁰³	62.14 ²⁰	28.94 ³³	19.61 ²¹⁸
31.4	17.944 ²¹²	28.38 ⁸⁴	07.366 ²³⁷	61.95 ¹⁹	29.34 ⁴⁰	17.58 ²⁰³
Feb. 10.4	18.182 ²³⁸	29.12 ⁷⁴	07.632 ²⁶⁶	61.77 ¹⁸	29.80 ⁴⁶	15.74 ¹⁸⁴
20.4	18.442 ²⁶⁰	29.72 ⁶⁰	07.921 ²⁸⁹	61.58 ¹⁹	30.31 ⁵¹	14.14 ¹⁶⁰
Mar. 1.3	18.718 ²⁷⁶	30.15 ⁴³	08.229 ³⁰⁸	61.38 ²⁰	30.86 ⁵⁵	12.80 ¹³⁴
11.3	19.006 ²⁸⁸	30.39 ²⁴	08.550 ³²¹	61.14 ²⁴	31.44 ⁵⁸	11.74 ¹⁰⁶
21.3	19.304 ²⁹⁸	30.41 ²	08.882 ³³²	60.88 ²⁶	32.04 ⁶⁰	10.98 ⁷⁶
31.3	19.606 ³⁰²	30.21 ²⁰	09.218 ³³⁶	60.58 ³⁰	32.66 ⁶²	10.54 ⁴⁴
Apr. 10.2	19.909 ³⁰³	29.80 ⁴¹	09.557 ³³⁹	60.26 ³²	33.27 ⁶¹	10.41 ¹³
20.2	20.209 ³⁰⁰	29.21 ⁵⁹	09.892 ³³⁵	59.95 ³¹	33.88 ⁶¹	10.61 ²⁰
30.2	20.501 ²⁹²	28.47 ⁷⁴	10.221 ³²⁹	59.64 ³¹	34.47 ⁵⁹	11.12 ⁵¹
May 10.1	20.782 ²⁸¹	27.61 ⁸⁶	10.536 ³¹⁵	59.38 ²⁶	35.03 ⁵⁶	11.95 ⁸³
20.1	21.046 ²⁶⁴	26.67 ⁹⁴	10.834 ²⁹⁸	59.17 ²¹	35.55 ⁵²	13.09 ¹¹⁴
30.1	21.287 ²⁴¹	25.69 ⁹⁸	11.107 ²⁷³	59.03 ¹⁴	36.03 ⁴⁸	14.50 ¹⁴¹
June 9.1	21.502 ²¹⁵	24.71 ⁹⁸	11.351 ²⁴⁴	59.00 ³	36.44 ⁴¹	16.16 ¹⁶⁶
19.0	21.683 ¹⁸¹	23.78 ⁹³	11.559 ²⁰⁸	59.06 ⁶	36.79 ³⁵	18.04 ¹⁸⁸
29.0	21.829 ¹⁴⁶	22.91 ⁸⁷	11.728 ¹⁶⁹	59.22 ¹⁶	37.07 ²⁸	20.08 ²⁰⁴
July 9.0	21.934 ¹⁰⁵	22.12 ⁷⁹	11.852 ¹²⁴	59.48 ²⁶	37.26 ¹⁹	22.22 ²¹⁴
19.0	21.997 ⁶³	21.44 ⁶⁸	11.929 ⁷⁷	59.83 ³⁵	37.36 ¹⁰	24.43 ²²¹
28.9	22.017 ²⁰	20.88 ⁵⁶	11.958 ²⁹	60.25 ⁴²	37.38 ²	26.62 ²¹⁹
Aug. 7.9	21.995 ²²	20.44 ⁴⁴	11.939 ¹⁹	60.72 ⁴⁷	37.31 ⁷	28.73 ²¹¹
17.9	21.932 ⁶³	20.13 ³¹	11.876 ⁶³	61.22 ⁵⁰	37.15 ¹⁶	30.67 ¹⁹⁴
27.8	21.834 ⁹⁸	19.92 ²¹	11.773 ¹⁰³	61.70 ⁴⁸	36.92 ²³	32.39 ¹⁷²
Sept. 6.8	21.705 ¹²⁹	19.81 ¹¹	11.635 ¹³⁸	62.14 ⁴⁴	36.63 ²⁹	33.81 ¹⁴²
16.8	21.554 ¹⁵¹	19.80 ¹	11.471 ¹⁶⁴	62.52 ³⁸	36.29 ³⁴	34.87 ¹⁰⁶
26.8	21.390 ¹⁶⁴	19.89 ⁹	11.292 ¹⁷⁹	62.82 ³⁰	35.92 ³⁷	35.54 ⁶⁷
Oct. 6.7	21.222 ¹⁶⁸	20.06 ¹⁷	11.108 ¹⁸⁴	63.02 ²⁰	35.53 ³⁹	35.78 ⁷⁴
16.7	21.059 ¹⁶³	20.31 ²⁵	10.929 ¹⁷⁹	63.11 ⁹	35.15 ³⁸	35.57 ²¹
26.7	20.913 ¹⁴⁶	20.64 ³³	10.769 ¹⁶⁰	63.10 ¹	34.80 ³⁵	34.92 ⁶⁵
Nov. 5.7	20.793 ¹²⁰	21.07 ⁴³	10.636 ¹³³	63.00 ¹⁰	34.50 ³⁰	33.85 ¹⁰⁷
15.6	20.705 ⁸⁸	21.57 ⁵⁰	10.540 ⁹⁶	62.81 ¹⁹	34.26 ²⁴	32.41 ¹⁴⁴
25.6	20.655 ⁵⁰	22.18 ⁶¹	10.486 ⁵⁴	62.58 ²³	34.10 ¹⁶	30.65 ¹⁷⁶
Dec. 5.6	20.648 ⁷	22.87 ⁶⁹	10.480 ⁶	62.31 ²⁷	34.02 ⁸	28.63 ²⁰²
15.5	20.686 ³⁸	23.64 ⁷⁷	10.523 ⁴³	62.03 ²⁸	34.03 ¹	26.44 ²¹⁹
25.5	20.768 ⁸²	24.48 ⁸⁴	10.615 ⁹²	61.76 ²⁷	34.14 ¹¹	24.15 ²²⁹
35.5	20.893 ¹²⁵	25.36 ⁸⁸	10.754 ¹³⁹	61.51 ²⁵	34.34 ²⁰	21.85 ²³⁰
Mean Place	19.847	21.74	09.498	58.46	33.062	19.90
Sec δ, Tan δ	1.013	-0.161	1.123	-0.511	2.149	-1.902
L α, L δ	0.00	+0.1	+0.01	+0.1	+0.05	+0.1
ω α, ω δ	0.00	-1.0	+0.01	-1.0	+0.02	-1.0
Authority and Catalogue No.	1136		1138		A. E.	1145

(12961)

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APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	30 Sagittarii.		β Lyrae.		σ Sagittarii.	
	6.24	Fo	Var.	B8p-B2p	2.14	B3
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 18 ^m 46	[°] 22 ['] 14	^h 18 ^m 47	[°] 33 ['] 16	^h 18 ^m 50	[°] 26 ['] 23
Jan. 1.5	28.129 ^s	50.05	22.844 ^s	37.77	45.371 ^s	19.91
11.5	28.280 ¹⁵¹	50.11	22.942 ⁹⁸	34.74 ³⁰³	45.523 ¹⁵²	19.69 ²²
21.4	28.470 ¹⁹⁰	50.18	23.087 ¹⁴⁵	31.77 ²⁹⁷	45.715 ¹⁹²	19.48 ²¹
31.4	28.692 ²²²	50.24	23.273 ¹⁸⁶	28.97 ²⁸⁰	45.941 ²²⁶	19.28 ²⁰
Feb. 10.4	28.943 ²⁵¹	50.27 ³	23.496 ²²³	26.43 ²⁵⁴	46.197 ²⁵⁶	19.07 ²¹
20.4	29.217 ²⁷⁴	50.26 ¹	23.750 ²⁵⁴	24.26 ²¹⁷	46.478 ²⁸¹	18.84 ²³
Mar. 1.3	29.510 ²⁹³	50.18	24.030 ²⁸⁰	22.54 ¹⁷²	46.778 ³⁰⁰	18.59 ²⁵
11.3	29.816 ³⁰⁶	50.03 ¹⁵	24.330 ³⁰⁰	21.33 ¹²¹	47.093 ³¹⁵	18.30 ²⁹
21.3	30.134 ³¹⁸	49.80 ²³	24.644 ³¹⁴	20.68 ⁶⁵	47.419 ³²⁶	17.96 ³⁴
31.3	30.457 ³²³	49.48 ³²	24.966 ³²²	20.59 ⁹	47.753 ³³⁴	17.59 ³⁷
Apr. 10.2	30.783 ³²⁶	49.09 ³⁹	25.290 ³²⁴	21.07 ⁴⁸	48.090 ³³⁷	17.19 ⁴⁰
20.2	31.107 ³²⁴	48.66 ⁴³	25.609 ³¹⁹	22.08 ¹⁰¹	48.425 ³³⁵	16.78 ⁴¹
30.2	31.425 ³¹⁸	48.19 ⁴⁷	25.918 ³⁰⁹	23.59 ¹⁵¹	48.754 ³²⁹	16.38 ⁴⁰
May 10.1	31.731 ³⁰⁶	47.72 ⁴⁷	26.209 ²⁹¹	25.52 ¹⁹³	49.073 ³¹⁹	16.02 ³⁶
20.1	32.021 ²⁹⁰	47.27 ⁴⁵	26.477 ²⁶⁸	27.80 ²²⁸	49.374 ³⁰¹	15.70 ³²
30.1	32.288 ²⁶⁷	46.88 ³⁹	26.716 ²³⁹	30.35 ²⁵⁵	49.653 ²⁷⁹	15.47 ²³
June 9.1	32.527 ²³⁹	46.55 ³³	26.919 ²⁰³	33.10 ²⁷⁵	49.904 ²⁵¹	15.34 ¹³
19.0	32.732 ²⁰⁵	46.32 ²³	27.082 ¹⁶³	35.95 ²⁸⁵	50.120 ²¹⁶	15.31 ³
29.0	32.899 ¹⁶⁷	46.18 ¹⁴	27.202 ¹²⁰	38.82 ²⁸⁷	50.297 ¹⁷⁷	15.40 ⁹
July 9.0	33.025 ¹²⁶	46.14 ⁴	27.276 ⁷⁴	41.64 ²⁸²	50.430 ¹³³	15.60 ²⁰
19.0	33.104 ⁷⁹	46.20 ⁶	27.301 ²⁵	44.34 ²⁷⁰	50.517 ⁸⁷	15.89 ²⁹
28.9	33.137 ³³	46.36 ¹⁶	27.278 ²³	46.85 ²⁵¹	50.556 ³⁹	16.27 ³⁸
Aug. 7.9	33.124 ¹³	46.58 ²²	27.208 ⁷⁰	49.12 ²²⁷	50.546 ¹⁰	16.71 ⁴⁴
17.9	33.067 ⁵⁷	46.87 ²⁹	27.095 ¹¹³	51.09 ¹⁹⁷	50.492 ⁵⁴	17.19 ⁴⁸
27.8	32.971 ⁹⁶	47.18 ³¹	26.942 ¹⁵³	52.73 ¹⁶⁴	50.396 ⁹⁶	17.67 ⁴⁸
Sept. 6.8	32.841 ¹³⁰	47.49 ³¹	26.757 ¹⁸⁵	54.01 ¹²⁸	50.264 ¹³²	18.14 ⁴⁷
16.8	32.686 ¹⁵⁵	47.79 ³⁰	26.547 ²¹⁰	54.89 ⁸⁸	50.106 ¹⁵⁸	18.55 ⁴¹
26.8	32.514 ¹⁷²	48.05 ²⁶	26.320 ²²⁷	55.35 ⁴⁶	49.930 ¹⁷⁶	18.89 ³⁴
Oct. 6.7	32.337 ¹⁷⁷	48.26 ²¹	26.087 ²³³	55.39 ⁴	49.747 ¹⁸³	19.14 ²⁵
16.7	32.165 ¹⁷²	48.42 ¹⁶	25.858 ²²⁹	54.99 ⁴⁰	49.569 ¹⁷⁸	19.29 ¹⁵
26.7	32.009 ¹⁵⁶	48.53 ¹¹	25.643 ²¹⁵	54.15 ⁸⁴	49.406 ¹⁶³	19.34 ⁵
Nov. 5.7	31.879 ¹³⁰	48.58 ⁵	25.452 ¹⁹¹	52.88 ¹²⁷	49.269 ¹³⁷	19.29 ⁵
15.6	31.783 ⁹⁶	48.60 ²	25.293 ¹⁵⁹	51.19 ¹⁶⁹	49.166 ¹⁰³	19.16 ¹³
25.6	31.727 ⁵⁶	48.60 ¹	25.173 ¹²⁰	49.12 ²⁰⁷	49.105 ⁶¹	18.98 ¹⁸
Dec. 5.6	31.717 ¹⁰	48.59 ¹	25.098 ⁷⁵	46.72 ²⁴⁰	49.090 ¹⁵	18.76 ²²
15.5	31.753 ³⁶	48.60 ¹	25.071 ²⁷	44.04 ²⁶⁸	49.123 ³³	18.51 ²⁵
25.5	31.837 ⁸⁴	48.61 ¹	25.093 ²²	41.16 ²⁸⁸	49.205 ⁸²	18.26 ²⁵
35.5	31.965 ¹²⁸	48.65 ⁴	25.165 ⁷²	38.17 ²⁹⁹	49.334 ¹²⁹	18.01 ²⁵
Mean Place	30.761	45.61	25.204	41.21	48.085	15.16
Sec δ , Tan δ	1.080	-0.409	1.196	+0.656	1.117	-0.496
L a , L δ	+0.01	+0.1	-0.02	+0.1	+0.01	+0.1
ω a , ω δ	+0.01	-1.0	-0.01	-1.0	+0.01	-1.0
Authority and Catalogue No.	1146		A. E. 1147		A. E. 1150	

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ξ Sagittarii.		γ Lyrae.		ε Aquilæ.	
	3.61	Ko	3.30	Aop	4.21	Ko
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 18 53	[°] ['] 21 12	^h ^m 18 56	[°] ['] 32 35	^h ^m 18 56	[°] ['] 14 57
Jan. 1.5	23.467 ^s	14.53 ["]	12.566 ^s	20.02 ["]	18.907 ^s	65.85 ["]
11.5	23.610 ¹⁴³	14.63 ¹⁰	12.655 ⁸⁹	17.05 ²⁹⁷	19.013 ¹⁰⁶	63.64 ²²¹
21.5	23.791 ¹⁸¹	14.73 ¹⁰	12.790 ¹³⁵	14.12 ²⁹³	19.157 ¹⁴⁴	61.47 ²¹⁷
31.4	24.005 ²¹⁴	14.81 ⁸	12.966 ¹⁷⁶	11.53 ²⁷⁹	19.336 ¹⁷⁹	59.42 ²⁰⁵
Feb. 10.4	24.248 ²⁴³	14.85 ⁴	13.180 ²¹⁴	08.80 ²⁵³	19.544 ²⁰⁸	57.57 ¹⁸⁵
20.4	24.515 ²⁶⁷	14.84 ¹	13.425 ²⁴⁵	06.62 ²¹⁸	19.778 ²³⁴	56.00 ¹⁵⁷
Mar. 1.3	24.801 ²⁸⁶	14.76 ⁸	13.697 ²⁷²	04.88 ¹⁷⁴	20.034 ²⁵⁶	54.78 ¹²²
11.3	25.102 ³⁰¹	14.59 ¹⁷	13.991 ²⁹⁴	03.63 ¹²⁵	20.306 ²⁷²	53.95 ⁸³
21.3	25.415 ³¹³	14.32 ²⁷	14.300 ³⁰⁹	02.93 ⁷⁰	20.591 ²⁸⁵	53.54 ⁴¹
31.3	25.735 ³²⁰	13.96 ³⁶	14.619 ³¹⁹	02.80 ¹³	20.885 ²⁹⁴	53.58 ⁴
Apr. 10.2	26.059 ³²⁴	13.52 ⁴⁴	14.941 ³²²	03.22 ⁴²	21.182 ²⁹⁷	54.04 ⁴⁶
20.2	26.382 ³²³	13.02 ⁵⁰	15.261 ³²⁰	04.17 ⁹⁵	21.478 ²⁹⁶	54.91 ⁸⁷
30.2	26.699 ³¹⁷	12.48 ⁵⁴	15.572 ³¹¹	05.62 ¹⁴⁵	21.768 ²⁹⁰	56.16 ¹²⁵
May 10.2	27.007 ³⁰⁸	11.93 ⁵⁵	15.867 ²⁹⁵	07.50 ¹⁸⁸	22.047 ²⁷⁹	57.72 ¹⁵⁶
20.1	27.299 ²⁹²	11.40 ⁵³	16.141 ²⁷⁴	09.74 ²²⁴	22.309 ²⁶²	59.53 ¹⁸¹
30.1	27.569 ²⁷⁰	10.91 ⁴⁹	16.386 ²⁴⁵	12.26 ²⁵²	22.548 ²³⁹	61.53 ²⁰⁰
June 9.1	27.812 ²⁴³	10.49 ⁴²	16.598 ²¹²	14.98 ²⁷²	22.759 ²¹¹	63.66 ²¹³
19.0	28.023 ²¹¹	10.16 ³³	16.771 ¹⁷³	17.81 ²⁸³	22.938 ¹⁷⁹	65.85 ²¹⁹
29.0	28.195 ¹⁷²	09.93 ²³	16.901 ¹³⁰	20.68 ²⁸⁷	23.080 ¹⁴²	68.02 ²¹⁷
July 9.0	28.325 ¹³⁰	09.81 ¹²	16.985 ⁸⁴	23.51 ²⁸³	23.181 ¹⁰¹	70.13 ²¹¹
19.0	28.411 ⁸⁶	09.80 ¹	17.021 ³⁶	26.22 ²⁷¹	23.239 ⁵⁸	72.12 ¹⁹⁹
28.9	28.451 ⁴⁰	09.88 ⁸	17.008 ¹³	28.75 ²⁵³	23.254 ¹⁵	73.95 ¹⁸³
Aug. 7.9	28.444 ⁷	10.05 ¹⁷	16.948 ⁶⁰	31.06 ²³¹	23.226 ²⁸	75.58 ¹⁶³
17.9	28.393 ⁵¹	10.28 ²³	16.844 ¹⁰⁴	33.08 ²⁰²	23.157 ⁶⁹	76.98 ¹⁴⁰
27.9	28.302 ⁹¹	10.56 ²⁸	16.700 ¹⁴⁴	34.77 ¹⁶⁹	23.052 ¹⁰⁵	78.13 ¹¹⁵
Sept. 6.8	28.178 ¹²⁴	10.86 ³⁰	16.523 ¹⁷⁷	36.11 ¹³⁴	22.915 ¹³⁷	79.00 ⁸⁷
16.8	28.027 ¹⁵¹	11.15 ²⁹	16.319 ²⁰⁴	37.06 ⁹⁵	22.754 ¹⁶¹	79.59 ⁵⁹
26.8	27.859 ¹⁶⁸	11.43 ²⁸	16.097 ²²²	37.60 ⁵⁴	22.577 ¹⁷⁷	79.88 ²⁹
Oct. 6.7	27.684 ¹⁷⁵	11.67 ²⁴	15.868 ²²⁹	37.72 ¹²	22.393 ¹⁸⁴	79.87 ¹
16.7	27.513 ¹⁷¹	11.86 ¹⁹	15.641 ²²⁷	37.41 ³¹	22.212 ¹⁸¹	79.55 ³²
26.7	27.356 ¹⁵⁷	12.00 ¹⁴	15.427 ²¹⁴	36.66 ⁷⁵	22.043 ¹⁶⁹	78.92 ⁶³
Nov. 5.7	27.224 ¹³²	12.11 ¹¹	15.235 ¹⁹²	35.49 ¹¹⁷	21.896 ¹⁴⁷	77.99 ⁹³
15.6	27.124 ¹⁰⁰	12.19 ⁸	15.073 ¹⁶²	33.90 ¹⁵⁹	21.777 ¹¹⁹	76.77 ¹²²
25.6	27.064 ⁶⁰	12.24 ⁵	14.949 ¹²⁴	31.92 ¹⁹⁸	21.694 ⁸³	75.27 ¹⁵⁰
Dec. 5.6	27.048 ¹⁶	12.29 ⁵	14.868 ⁸¹	29.61 ²³¹	21.650 ⁴⁴	73.53 ¹⁷⁴
15.6	27.078 ³⁰	12.34 ⁵	14.833 ³⁵	27.01 ²⁶⁰	21.649 ¹	71.59 ¹⁹⁴
25.5	27.154 ⁷⁶	12.41 ⁷	14.847 ¹⁴	24.19 ²⁸²	21.691 ⁴²	69.49 ²¹⁰
35.5	27.274 ¹²⁰	12.49 ⁸	14.910 ⁶³	21.26 ²⁹³	21.775 ⁸⁴	67.31 ²¹⁸
Mean Place	26.075	09.69	14.921	23.30	21.202	69.80
Sec δ, Tan δ	1.073	-0.388	1.187	+0.639	1.035	+0.267
L α, L δ	+0.01	+0.1	-0.02	+0.1	-0.01	+0.1
ω α, ω δ	+0.01	-1.0	-0.01	-1.0	0.00	-1.0
Authority and Catalogue No.	A. N.	1155	A. E.	1157	A. N.	1158

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ζ Sagittarii m.		ζ Aquilæ.		λ Aquilæ.	
	2.71	A 2	3.02	A 0	3.55	B 9
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 18 57	^m 29 59	^h 19 02	^m 13 45	^h 19 02	^m 4 59
Jan. 1.5	59.102 ¹⁴⁸	09.06 ⁴⁷	03.692 ¹⁰²	15.08 ²¹⁴	23.256 ¹¹⁸	35.27 ¹⁰⁸
11.5	59.250 ¹⁸⁹	09.19 ⁴⁶	03.794 ¹⁴⁰	12.94 ²¹⁰	23.374 ¹⁵⁵	36.35 ¹⁰⁶
21.5	59.439 ²²⁶	08.73 ⁴⁵	03.934 ¹⁷⁴	10.84 ¹⁹⁸	23.529 ¹⁸⁶	37.41 ⁹⁸
31.4	59.665	08.28	04.108	08.86	23.715	38.39
Feb. 10.4	59.922 ²⁵⁷	07.83 ⁴⁵	04.313 ²⁰⁵	07.07 ¹⁷⁹	23.930 ²¹⁵	39.25 ⁸⁶
20.4	60.205 ²⁸³	07.38 ⁴⁵	04.543 ²³⁰	05.54 ¹⁵³	24.168 ²³⁸	39.96 ⁷¹
Mar. 1.4	60.509 ³⁰⁴	06.93 ⁴⁵	04.795 ²⁵²	04.35 ¹¹⁹	24.426 ²⁵⁸	40.46 ⁵⁰
11.3	60.831 ³²²	06.48 ⁴⁵	05.064 ²⁶⁹	03.54 ⁸¹	24.700 ²⁷⁴	40.72 ²⁶
21.3	61.165 ³³⁴	06.02 ⁴⁶	05.346 ²⁸²	03.14 ⁴⁰	24.986 ²⁸⁶	40.73 ¹
31.3	61.509 ³⁴⁴	05.55 ⁴⁷	05.638 ²⁹²	03.17 ³	25.280 ²⁹⁴	40.48 ²⁵
Apr. 10.2	61.856 ³⁴⁷	05.09 ⁴⁶	05.935 ²⁹⁷	03.63 ⁴⁶	25.579 ²⁹⁹	39.98 ⁵⁰
20.2	62.204 ³⁴⁸	04.67 ⁴²	06.231 ²⁹⁶	04.49 ⁸⁶	25.879 ³⁰⁰	39.25 ⁷³
30.2	62.546 ³⁴²	04.29 ³⁸	06.523 ²⁹²	05.71 ¹²²	26.176 ²⁹⁷	38.33 ⁹²
May 10.2	62.878 ³³²	03.98 ³¹	06.804 ²⁸¹	07.24 ¹⁵³	26.463 ²⁸⁷	37.25 ¹⁰⁸
20.1	63.194 ³¹⁶	03.76 ²²	07.069 ²⁶⁵	09.02 ¹⁷⁸	26.736 ²⁷³	36.07 ¹¹⁸
30.1	63.487 ²⁹³	03.65 ¹¹	07.313 ²⁴⁴	10.99 ¹⁹⁷	26.990 ²⁵⁴	34.82 ¹²⁵
June 9.1	63.752 ²⁶⁵	03.66 ¹	07.529 ²¹⁶	13.08 ²⁰⁹	27.219 ²²⁹	33.54 ¹²⁸
19.1	63.981 ²²⁹	03.79 ¹³	07.714 ¹⁸⁵	15.22 ²¹⁴	27.417 ¹⁹⁸	32.29 ¹²⁵
29.0	64.170 ¹⁸⁹	04.05 ²⁶	07.862 ¹⁴⁸	17.36 ²¹⁴	27.580 ¹⁶³	31.11 ¹¹⁸
July 9.0	64.315 ¹⁴⁵	04.44 ³⁹	07.970 ¹⁰⁸	19.44 ²⁰⁸	27.704 ¹²⁴	30.02 ¹⁰⁹
19.0	64.412 ⁹⁷	04.92 ⁴⁸	08.035 ⁶⁵	21.40 ¹⁹⁶	27.786 ⁸²	29.05 ⁹⁷
28.9	64.459 ⁴⁷	05.50 ⁵⁸	08.056 ²¹	23.19 ¹⁷⁹	27.825 ³⁹	28.21 ⁸⁴
Aug. 7.9	64.455 ⁴	06.13 ⁶³	08.035 ²¹	24.79 ¹⁶⁰	27.820 ⁵	27.52 ⁶⁹
17.9	64.404 ⁵¹	06.78 ⁶⁵	07.972 ⁶³	26.17 ¹³⁸	27.774 ⁴⁶	26.98 ⁵⁴
27.9	64.310 ⁹⁴	07.42 ⁶⁴	07.872 ¹⁰⁰	27.30 ¹¹³	27.690 ⁸⁴	26.59 ³⁹
Sept. 6.8	64.179 ¹³¹	08.03 ⁶¹	07.740 ¹³²	28.16 ⁸⁶	27.574 ¹¹⁶	26.34 ²⁵
16.8	64.019 ¹⁶⁰	08.56 ⁵³	07.584 ¹⁵⁶	28.75 ⁵⁹	27.433 ¹⁴¹	26.24 ¹⁰
26.8	63.839 ¹⁸⁰	08.98 ⁴²	07.410 ¹⁷⁴	29.05 ³⁰	27.274 ¹⁵⁹	26.27 ³
Oct. 6.8	63.650 ¹⁸⁹	09.28 ³⁰	07.229 ¹⁸¹	29.05 [—]	27.107 ¹⁶⁷	26.42 ¹⁵
16.7	63.465 ¹⁸⁵	09.44 ¹⁶	07.049 ¹⁸⁰	28.76 ²⁹	26.943 ¹⁶⁴	26.70 ²⁸
26.7	63.294 ¹⁷¹	09.46 ²	06.881 ¹⁶⁸	28.17 ⁵⁹	26.791 ¹⁵²	27.09 ³⁹
Nov. 5.7	63.148 ¹⁴⁶	09.35 ¹¹	06.734 ¹⁴⁷	27.29 ⁸⁸	26.659 ¹³²	27.61 ⁵²
15.6	63.037 ¹¹¹	09.12 ²³	06.614 ¹²⁰	26.13 ¹¹⁶	26.557 ¹⁰²	28.24 ⁶³
25.6	62.967 ⁷⁰	08.79 ³³	06.529 ⁸⁵	24.71 ¹⁴²	26.490 ⁶⁷	28.98 ⁷⁴
Dec. 5.6	62.944 ²³	08.39 ⁴⁰	06.483 ⁴⁶	23.05 ¹⁶⁶	26.462 ²⁸	29.83 ⁸⁵
15.6	62.970 ²⁶	07.93 ⁴⁶	06.479 ⁴	21.18 ¹⁸⁷	26.476 ¹⁴	30.77 ⁹⁴
25.5	63.046 ⁷⁶	07.45 ⁴⁸	06.517 ³⁸	19.17 ²⁰¹	26.532 ⁵⁶	31.79 ¹⁰²
35.5	63.169 ¹²³	06.97 ⁴⁸	06.595 ⁷⁸	17.08 ²⁰⁹	26.628 ⁹⁶	32.85 ¹⁰⁶
Mean Place	61.891	04.38	05.988	19.10	25.646	30.46
Sec δ, Tan δ	1.155	-0.577	1.030	+0.245	1.004	-0.087
L α, L δ	+0.01	+0.1	-0.01	+0.1	0.00	+0.1
ω α, ω δ	+0.01	-1.0	0.00	-1.0	0.00	-1.0
Authority and Catalogue No.	A. N.	1159	A. E.	1160	A. E.	1162

APPARENT PLACES OF STARS, 1928.

399

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	τ Sagittarii.		α Coronæ Australis.		π Sagittarii.	
	3.42	Ko	4.12	A 2	3.02	F 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 19 02	^m 27 46	^h 19 04	^m 38 01	^h 19 05	^m 21 08
Jan. 1.5	24.007 ^s	43.15	31.532 ^s	11.24	26.366 ^s	27.73
11.5	24.147 ¹⁴⁰	42.81 ³⁴	31.683 ¹⁵¹	10.25 ⁹⁹	26.497 ¹³¹	27.79 ⁶
21.5	24.328 ¹⁸¹	42.47 ³⁴	31.881 ¹⁹⁸	09.27 ⁹⁸	26.666 ¹⁶⁹	27.84 ⁵
31.4	24.545 ²¹⁷	42.12 ³⁵	32.119 ²³⁸	08.32 ⁹⁵	26.869 ²⁰³	27.87 ³
Feb. 10.4	24.792 ²⁴⁷	41.77 ³⁵	32.393 ²⁷⁴	07.41 ⁹¹	27.102 ²³³	27.85 ²
20.4	25.067 ²⁷⁵	41.40 ³⁷	32.697 ³⁰⁴	06.55 ⁸⁶	27.359 ²⁵⁷	27.77 ⁸
Mar. 1.4	25.362 ²⁹⁵	41.01 ³⁹	33.025 ³²⁸	05.75 ⁸⁰	27.637 ²⁷⁸	27.61 ¹⁶
11.3	25.675 ³¹³	40.58 ⁴³	33.374 ³⁴⁹	05.01 ⁷⁴	27.933 ²⁹⁶	27.36 ²⁵
21.3	26.000 ³²⁵	40.13 ⁴⁵	33.737 ³⁶³	04.34 ⁶⁷	28.241 ³⁰⁸	27.01 ³⁵
31.3	26.335 ³³⁵	39.65 ⁴⁸	34.111 ³⁷⁴	03.75 ⁵⁹	28.558 ³¹⁷	26.57 ⁴⁴
Apr. 10.2	26.676 ³⁴¹	39.16 ⁴⁹	34.490 ³⁷⁹	03.25 ⁵⁰	28.881 ³²³	26.05 ⁵²
20.2	27.017 ³⁴¹	38.67 ⁴⁹	34.870 ³⁸⁰	02.86 ³⁹	29.206 ³²⁵	25.46 ⁵⁹
30.2	27.355 ³³⁸	38.21 ⁴⁶	35.246 ³⁷⁶	02.60 ²⁶	29.527 ³²¹	24.83 ⁶³
May 10.2	27.683 ³²⁸	37.80 ⁴¹	35.611 ³⁶⁵	02.48 ¹²	29.839 ³¹²	24.19 ⁶⁴
20.1	27.995 ³¹²	37.47 ³³	35.959 ³⁴⁸	02.51 ³	30.138 ²⁹⁹	23.58 ⁶¹
30.1	28.286 ²⁹¹	37.23 ²⁴	36.282 ³²³	02.71 ²⁰	30.416 ²⁷⁸	23.01 ⁵⁷
June 9.1	28.549 ²⁶³	37.10 ¹³	36.575 ²⁹³	03.08 ³⁷	30.669 ²⁵³	22.52 ⁴⁹
19.1	28.778 ²²⁹	37.10 ¹¹	36.831 ²⁵⁶	03.61 ⁵³	30.890 ²²¹	22.13 ³⁹
29.0	28.969 ¹⁹¹	37.21 ¹¹	37.042 ²¹¹	04.30 ⁶⁹	31.073 ¹⁸³	21.84 ²⁹
July 9.0	29.114 ¹⁴⁵	37.46 ²⁵	37.205 ¹⁶³	05.12 ⁸²	31.215 ¹⁴²	21.67 ¹⁷
19.0	29.213 ⁹⁹	37.82 ³⁶	37.316 ¹¹¹	06.06 ⁹⁴	31.312 ⁹⁷	21.62 ⁵
28.9	29.264 ⁵¹	38.27 ⁴⁵	37.372 ⁵⁶	07.08 ¹⁰²	31.363 ⁵¹	21.69 ⁷
Aug. 7.9	29.265 ¹	38.79 ⁵²	37.373 ¹	08.13 ¹⁰⁵	31.368 ⁵	21.86 ¹⁷
17.9	29.219 ⁴⁶	39.36 ⁵⁷	37.322 ⁵¹	09.18 ¹⁰⁵	31.327 ⁴¹	22.10 ²⁴
27.9	29.131 ⁸⁸	39.93 ⁵⁷	37.222 ¹⁰⁰	10.18 ¹⁰⁰	31.245 ⁸²	22.39 ²⁹
Sept. 6.8	29.005 ¹²⁶	40.48 ⁵⁵	37.080 ¹⁴²	11.08 ⁹⁰	31.128 ¹¹⁷	22.72 ³³
16.8	28.850 ¹⁵⁵	40.98 ⁵⁰	36.905 ¹⁷⁵	11.84 ⁷⁶	30.982 ¹⁴⁶	23.05 ³³
26.8	28.675 ¹⁷⁵	41.40 ⁴²	36.709 ¹⁹⁶	12.43 ⁵⁹	30.817 ¹⁶⁵	23.37 ³²
Oct. 6.8	28.492 ¹⁸³	41.72 ³²	36.500 ²⁰⁹	12.82 ³⁹	30.644 ¹⁷³	23.65 ²⁸
16.7	28.311 ¹⁸¹	41.93 ²¹	36.293 ²⁰⁷	12.98 ¹⁶	30.472 ¹⁷²	23.89 ²⁴
26.7	28.142 ¹⁶⁹	42.01 ⁸	36.101 ¹⁹²	12.92 ⁶	30.312 ¹⁶⁰	24.08 ¹⁹
Nov. 5.7	27.998 ¹⁴⁴	41.99 ²	35.934 ¹⁶⁷	12.64 ²⁸	30.174 ¹³⁸	24.22 ¹⁴
15.6	27.886 ¹¹²	41.86 ¹³	35.803 ¹³¹	12.16 ⁴⁸	30.068 ¹⁰⁶	24.32 ¹⁰
25.6	27.815 ⁷¹	41.65 ²¹	35.716 ⁸⁷	11.51 ⁶⁵	29.999 ⁶⁹	24.40 ⁸
Dec. 5.6	27.790 ²⁵	41.37 ²⁸	35.680 ³⁶	10.71 ⁸⁰	29.972 ²⁷	24.45 ⁵
15.6	27.811 ²¹	41.05 ³²	35.698 ¹⁸	09.81 ⁹⁰	29.990 ¹⁸	24.50 ⁵
25.5	27.881 ⁷⁰	40.71 ³⁴	35.769 ⁷¹	08.85 ⁹⁶	30.054 ⁶⁴	24.55 ⁵
35.5	27.998 ¹¹⁷	40.34 ³⁷	35.893 ¹²⁴	07.85 ¹⁰⁰	30.162 ¹⁰⁸	24.59 ⁴
Mean Place	26.738	37.61	34.549	05.31	28.963	22.20
Sec δ , Tan δ	1.130	-0.527	1.269	-0.782	1.072	-0.387
L α , L δ	+0.01	+0.1	+0.02	+0.1	+0.01	+0.1
ω α , ω δ	+0.01	-1.0	+0.01	-1.0	+0.01	-1.0
Authority and Catalogue No.	1161		A. E. 1163		A. E. 1166	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	ψ Sagittarii.		δ Draconis.		ω Aquilæ.	
	4.93	F 5	3.24	K 0	5.14	A 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 19 ^m 11	[°] 25 ['] 22	^h 19 ^m 12	[°] 67 ['] 31	^h 19 ^m 14	[°] 11 ['] 27
Jan. 1.5	04.940 ⁵	61.77 ¹²⁸	28.93 ³	64.65 ³⁵⁷	23.852 ⁹²	47.80 ¹⁹⁷
11.5	05.068 ¹⁶⁹	61.55 ²³	28.90 ⁸	61.08 ³⁵⁹	23.944 ¹²⁹	45.83 ¹⁹⁴
21.5	05.237 ²⁰³	61.32 ²⁶	28.98 ¹⁹	57.49 ³⁴⁸	24.073 ¹⁶³	43.89 ¹⁸⁵
31.4	05.440	61.06	29.17	54.01	24.236	42.04
Feb. 10.4	05.675 ²³⁵	60.78 ²⁸	29.45 ²⁸	50.76 ³²⁵	24.430 ¹⁹⁴	40.37 ¹⁶⁷
20.4	05.937 ²⁶²	60.46 ³²	29.83 ³⁸	47.86 ²⁹⁰	24.651 ²²¹	38.95 ¹⁴²
Mar. 1.4	06.220 ²⁸³	60.09 ³⁷	30.28 ⁴⁵	45.44 ²⁴²	24.894 ²⁴³	37.84 ¹¹¹
11.3	06.521 ³⁰¹	59.66 ⁴³	30.80 ⁵²	43.56 ¹⁸⁸	25.156 ²⁶²	37.08 ⁷⁶
21.3	06.837 ³¹⁶	59.18 ⁴⁸	31.37 ⁵⁷	42.29 ¹²⁷	25.433 ²⁷⁷	36.72 ³⁶
31.3	07.164 ³²⁷	58.64 ⁵⁴	31.97 ⁶⁰	41.68 ⁶¹	25.721 ²⁸⁸	36.77 ⁵
Apr. 10.2	07.497 ³³³	58.07 ⁵⁷	32.57 ⁶⁰	41.74 ⁶	26.016 ²⁹⁵	37.23 ⁴⁶
20.2	07.832 ³³⁵	57.48 ⁵⁹	33.17 ⁶⁰	42.45 ⁷¹	26.314 ²⁹⁸	38.06 ⁸³
30.2	08.165 ³³³	56.89 ⁵⁹	33.75 ⁵⁸	43.77 ¹³²	26.608 ²⁹⁴	39.24 ¹¹⁸
May 10.2	08.490 ³²⁵	56.33 ⁵⁶	34.28 ⁵³	45.65 ¹⁸⁸	26.894 ²⁸⁶	40.72 ¹⁴⁸
20.1	08.801 ³¹¹	55.84 ⁴⁹	34.76 ⁴⁸	48.01 ²³⁶	27.166 ²⁷²	42.44 ¹⁷²
30.1	09.093 ²⁹²	55.41 ⁴³	35.17 ⁴¹	50.78 ²⁷⁷	27.418 ²⁵²	44.34 ¹⁹⁰
June 9.1	09.359 ²⁶⁶	55.10 ³¹	35.50 ³³	53.86 ³⁰⁸	27.645 ²²⁷	46.36 ²⁰²
19.1	09.591 ²³²	54.91 ¹⁹	35.74 ²⁴	57.16 ³³⁰	27.841 ¹⁹⁶	48.43 ²⁰⁷
29.0	09.786 ¹⁹⁵	54.85 ⁶	35.88 ¹⁴	60.59 ³⁴³	28.002 ¹⁶¹	50.50 ²⁰⁷
July 9.0	09.938 ¹⁵²	54.92 ⁷	35.92 ⁴	64.05 ³⁴⁶	28.123 ¹²¹	52.50 ²⁰⁰
19.0	10.044 ¹⁰⁶	55.11 ¹⁹	35.86 ⁶	67.46 ³⁴¹	28.202 ⁷⁹	54.39 ¹⁸⁹
28.9	10.103 ⁵⁹	55.40 ²⁹	35.71 ¹⁵	70.74 ³²⁸	28.237 ³⁵	56.12 ¹⁷³
Aug. 7.9	10.113 ¹⁰	55.79 ³⁹	35.46 ²⁵	73.81 ³⁰⁷	28.229 ⁸	57.67 ¹⁵⁵
17.9	10.076 ³⁷	56.25 ⁴⁶	35.12 ³⁴	76.60 ²⁷⁹	28.179 ⁵⁰	59.01 ¹³⁴
27.9	09.996 ⁸⁰	56.73 ⁴⁸	34.71 ⁴¹	79.05 ²⁴⁵	28.091 ⁸⁸	60.11 ¹¹⁰
Sept. 6.8	09.879 ¹¹⁷	57.23 ⁵⁰	34.23 ⁴⁸	81.10 ²⁰⁵	27.969 ¹²²	60.96 ⁸⁵
16.8	09.732 ¹⁴⁷	57.69 ⁴⁶	33.69 ⁵⁴	82.72 ¹⁶²	27.822 ¹⁴⁷	61.55 ⁵⁹
26.8	09.564 ¹⁶⁸	58.10 ⁴¹	33.11 ⁵⁸	83.85 ¹¹³	27.655 ¹⁶⁷	61.88 ³³
Oct. 6.8	09.386 ¹⁷⁸	58.44 ³⁴	32.51 ⁶⁰	84.47 ⁶²	27.479 ¹⁷⁶	61.93 ⁵
16.7	09.208 ¹⁷⁸	58.69 ²⁵	31.90 ⁶¹	84.55 ⁸	27.304 ¹⁷⁵	61.70 ²³
26.7	09.042 ¹⁶⁶	58.85 ¹⁶	31.31 ⁵⁹	84.09 ⁴⁶	27.137 ¹⁶⁷	61.19 ⁵¹
Nov. 5.7	08.899 ¹⁴³	58.91 ⁶	30.75 ⁵⁶	83.08 ¹⁰¹	26.989 ¹⁴⁸	60.42 ⁷⁷
15.6	08.785 ¹¹⁴	58.89 ²	30.23 ⁵²	81.52 ¹⁵⁶	26.867 ¹²²	59.38 ¹⁰⁴
25.6	08.709 ⁷⁶	58.79 ¹⁰	29.77 ⁴⁶	79.45 ²⁰⁷	26.778 ⁸⁹	58.09 ¹²⁹
Dec. 5.6	08.678 ³¹	58.64 ¹⁵	29.39 ³⁸	76.92 ²⁵³	26.726 ⁵²	56.58 ¹⁵¹
15.6	08.691 ¹³	58.45 ¹⁹	29.09 ³⁰	73.98 ²⁹⁴	26.714 ¹²	54.88 ¹⁷⁰
25.5	08.751 ⁶⁰	58.23 ²²	28.89 ²⁰	70.72 ³²⁶	26.743 ²⁹	53.04 ¹⁸⁴
35.5	08.857 ¹⁰⁶	58.00 ²³	28.79 ¹⁰	67.26 ³⁴⁶	26.812 ⁶⁹	51.10 ¹⁹⁴
Mean Place	07.607	55.75	32.531	65.68	26.143	52.02
Sec δ , Tan δ	1.107	-0.474	2.617	+2.418	1.020	+0.203
L α , L δ	-0.01	+0.1	-0.06	+0.1	-0.01	+0.1
ω α , ω δ	+0.01	-1.0	-0.05	-1.0	0.00	-0.9
Authority and Catalogue No.	1172		A. E. 1173		A. E. 1177	

APPARENT PLACES OF STARS, 1928.

401

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Aquilæ.		59 G Telescopii.		6 Vulpeculæ.	
	3.44	F o	5.58	K 2	4.63	M a
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 19 21	^m 2 57	^h 19 21	^m 54 28	^h 19 25	^m 24 30
Jan. 1.5	49.746 ^s	67.21 ^s	57.775 ^s	22.61 ^s	40.178 ^s	61.77 ^s
11.5	49.839 ⁹³	65.74 ¹⁴⁷	57.927 ¹⁵²	20.62 ¹⁹⁹	40.244 ⁶⁶	59.21 ²⁵⁶
21.5	49.969 ¹³⁰	64.28 ¹⁴⁶	58.144 ²¹⁷	18.63 ¹⁹⁹	40.351 ¹⁰⁷	56.65 ²⁵⁶
31.4	50.131 ¹⁶²	62.91 ¹³⁷	58.420 ²⁷⁶	16.68 ¹⁹³	40.497 ¹⁴⁶	54.19 ²⁴⁶
Feb. 10.4	50.323 ¹⁹²	61.69 ¹²²	58.748 ³²⁸	14.82 ¹⁸⁶	40.677 ¹⁸⁰	51.94 ²²⁵
20.4	50.541 ²¹⁸	60.67 ¹⁰²	59.123 ³⁷⁵	13.09 ¹⁷³	40.889 ²¹²	49.97 ¹⁹⁷
Mar. 1.4	50.781 ²⁴⁰	59.90 ⁷⁷	59.534 ⁴¹¹	11.52 ¹⁵⁷	41.129 ²⁴⁰	48.37 ¹⁶⁰
11.3	51.040 ²⁵⁹	59.43 ⁴⁷	59.977 ⁴⁴³	10.14 ¹³⁸	41.392 ²⁶³	47.19 ¹¹⁸
21.3	51.315 ²⁷⁵	59.28 ¹⁵	60.444 ⁴⁶⁷	08.97 ¹¹⁷	41.674 ²⁸²	46.50 ⁶⁹
31.3	51.601 ²⁸⁶	59.46 ¹⁸	60.931 ⁴⁸⁷	08.02 ⁹⁵	41.970 ²⁹⁶	46.31 ¹⁹
Apr. 10.3	51.895 ²⁹⁴	59.97 ⁵¹	61.428 ⁴⁹⁷	07.32 ⁷⁰	42.275 ³⁰⁵	46.62 ³¹
20.2	52.193 ²⁹⁸	60.78 ⁸¹	61.930 ⁵⁰²	06.89 ⁴³	42.584 ³⁰⁹	47.42 ⁸⁰
30.2	52.490 ²⁹⁷	61.87 ¹⁰⁹	62.427 ⁴⁹⁷	06.74 ¹⁵	42.891 ³⁰⁷	48.67 ¹²⁵
May 10.2	52.780 ²⁹⁰	63.19 ¹³²	62.913 ⁴⁸⁶	06.87 ¹³	43.189 ²⁹⁸	50.33 ¹⁶⁶
20.1	53.059 ²⁷⁹	64.68 ¹⁴⁹	63.377 ⁴⁶⁴	07.30 ⁴³	43.474 ²⁸⁵	52.35 ²⁰⁰
30.1	53.320 ²⁶¹	66.30 ¹⁶²	63.812 ⁴³⁵	08.00 ⁷⁰	43.736 ²⁶²	54.59 ²²⁶
June 9.1	53.556 ²³⁶	68.00 ¹⁷⁰	64.206 ³⁹⁴	08.98 ⁹⁸	43.971 ²³⁵	57.05 ²⁴⁶
19.1	53.764 ²⁰⁸	69.70 ¹⁷⁰	64.552 ³⁴⁶	10.22 ¹²⁴	44.172 ²⁰¹	59.62 ²⁵⁷
29.0	53.938 ¹⁷⁴	71.37 ¹⁶⁷	64.841 ²⁸⁹	11.68 ¹⁴⁶	44.336 ¹⁶⁴	62.25 ²⁶³
July 9.0	54.073 ¹³⁵	72.97 ¹⁶⁰	65.065 ²²⁴	13.33 ¹⁶⁵	44.457 ¹²¹	64.86 ²⁶¹
19.0	54.168 ⁹⁵	74.44 ¹⁴⁷	65.220 ¹⁵⁵	15.11 ¹⁷⁸	44.534 ⁷⁷	67.37 ²⁵¹
29.0	54.218 ⁵⁰	75.77 ¹³³	65.303 ⁸³	16.97 ¹⁸⁶	44.563 ²⁹	69.74 ²³⁷
Aug. 7.9	54.224 ⁶	76.93 ¹¹⁶	65.312 ⁹	18.84 ¹⁸⁷	44.548 ¹⁵	71.91 ²¹⁷
17.9	54.189 ³⁵	77.90 ⁹⁷	65.251 ⁶¹	20.67 ¹⁸³	44.488 ⁶⁰	73.84 ¹⁹³
27.9	54.115 ⁷⁴	78.68 ⁷⁸	65.124 ¹²⁷	22.36 ¹⁶⁹	44.387 ¹⁰¹	75.49 ¹⁶⁵
Sept. 6.8	54.007 ¹⁰⁸	79.25 ⁵⁷	64.936 ¹⁸⁸	23.88 ¹⁵²	44.251 ¹³⁶	76.84 ¹³⁵
16.8	53.871 ¹³⁶	79.62 ³⁷	64.701 ²³⁵	25.15 ¹²⁷	44.086 ¹⁶⁵	77.85 ¹⁰¹
26.8	53.716 ¹⁵⁵	79.80 ¹⁸	64.430 ²⁷¹	26.12 ⁹⁷	43.899 ¹⁸⁷	78.51 ⁶⁶
Oct. 6.8	53.551 ¹⁶⁵	79.76 ⁴	64.139 ²⁹¹	26.75 ⁶³	43.702 ¹⁹⁷	78.80 ²⁹
16.7	53.384 ¹⁶⁷	79.53 ²³	63.843 ²⁹⁶	27.00 ²⁵	43.502 ²⁰⁰	78.71 ⁹
26.7	53.226 ¹⁵⁸	79.10 ⁴³	63.560 ²⁸³	26.86 ¹⁴	43.309 ¹⁹³	78.25 ⁴⁶
Nov. 5.7	53.085 ¹⁴¹	78.48 ⁶²	63.305 ²⁵⁵	26.34 ⁵²	43.133 ¹⁷⁶	77.40 ⁸⁵
15.7	52.970 ¹¹⁵	77.67 ⁸¹	63.091 ²¹⁴	25.45 ⁸⁹	42.981 ¹⁵²	76.19 ¹²¹
25.6	52.886 ⁸⁴	76.69 ⁹⁸	62.932 ¹⁵⁹	24.24 ¹²¹	42.860 ¹²¹	74.62 ¹⁵⁷
Dec. 5.6	52.839 ⁴⁷	75.55 ¹¹⁴	62.836 ⁹⁶	22.74 ¹⁵⁰	42.776 ⁸⁴	72.74 ¹⁸⁸
15.6	52.831 ⁸	74.27 ¹²⁸	62.808 ²⁸	21.03 ¹⁷¹	42.734 ⁴²	70.59 ²¹⁵
25.5	52.863 ³²	72.88 ¹³⁹	62.851 ⁴³	19.15 ¹⁸⁸	42.733 ¹	68.23 ²³⁶
35.5	52.935 ⁷²	71.44 ¹⁴⁴	62.965 ¹¹⁴	17.17 ¹⁹⁸	42.775 ⁴²	65.75 ²⁴⁸
Mean Place	52.062	72.10	61.586	14.80	42.470	65.02
Sec δ , Tan δ	1.001	+0.052	1.721	-1.400	1.099	+0.456
L a, L δ	0.00	+0.1	+0.03	+0.1	-0.01	+0.1
ω a, ω δ	0.00	-0.9	+0.03	-0.9	-0.01	-0.9
Authority and Catalogue No.	A. E.	1185		1186		1190

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β^1 Cygni. K o-A o		μ Aquilæ. K o		λ Sagittarii. B 9	
	3.24		4.65		4.66	
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 19 27	^m 27 48'	^h 19 30	^m 7 13'	^h 19 32	^m 25 02'
Jan. 1.5	46.675 ^s	23.73	31.980 ^s	25.15	17.027 ^s	45.02
11.5	46.735 ⁶⁰	21.04 ²⁶⁹	32.061 ⁸¹	23.45 ¹⁷⁰	17.133 ¹⁰⁶	44.76 ²⁶
21.5	46.838 ¹⁰³	18.36 ²⁶⁸	32.178 ¹¹⁷	21.78 ¹⁶⁷	17.278 ¹⁴⁵	44.46 ³⁰
31.5	46.981 ¹⁴³	15.77 ²⁵⁹	32.328 ¹⁵⁰	20.19 ¹⁵⁹	17.460 ¹⁸²	44.12 ³⁴
Feb. 10.4	47.160 ¹⁷⁹	13.38 ²³⁹	32.510 ¹⁸²	18.75 ¹⁴⁴	17.674 ²¹⁴	43.74 ³⁸
20.4	47.372 ²¹²	11.28 ²¹⁰	32.718 ²⁰⁸	17.54 ¹²¹	17.916 ²⁴²	43.30 ⁴⁴
Mar. 1.4	47.613 ²⁴¹	09.56 ¹⁷²	32.951 ²³³	16.60 ⁹⁴	18.183 ²⁶⁷	42.79 ⁵¹
11.3	47.878 ²⁶⁵	08.29 ¹²⁷	33.203 ²⁵²	15.98 ⁶²	18.470 ²⁸⁷	42.22 ⁵⁷
21.3	48.164 ²⁸⁶	07.51 ⁷⁸	33.473 ²⁷⁰	15.72 ²⁶	18.775 ³⁰⁵	41.58 ⁶⁴
31.3	48.465 ³⁰¹	07.25 ²⁶	33.757 ²⁸⁴	15.83 ¹¹	19.094 ³¹⁹	40.88 ⁷⁰
Apr. 10.3	48.776 ³¹¹	07.52 ²⁷	34.050 ²⁹³	16.30 ⁴⁷	19.423 ³²⁹	40.14 ⁷⁴
20.2	49.091 ³¹⁵	08.31 ⁷⁹	34.347 ²⁹⁷	17.12 ⁸²	19.758 ³³⁵	39.38 ⁷⁶
30.2	49.403 ³¹²	09.57 ¹²⁶	34.645 ²⁹⁸	18.25 ¹¹³	20.094 ³³⁶	38.62 ⁷⁶
May 10.2	49.706 ³⁰³	11.25 ¹⁶⁸	34.938 ²⁹³	19.65 ¹⁴⁰	20.426 ³³²	37.88 ⁷⁴
20.2	49.995 ²⁸⁹	13.29 ²⁰⁴	35.219 ²⁸¹	21.26 ¹⁶¹	20.747 ³²¹	37.21 ⁶⁷
30.1	50.261 ²⁶⁶	15.63 ²³⁴	35.483 ²⁶⁴	23.03 ¹⁷⁷	21.051 ³⁰⁴	36.63 ⁵⁸
June 9.1	50.499 ²³⁸	18.18 ²⁵⁵	35.724 ²⁴¹	24.90 ¹⁸⁷	21.331 ²⁸⁰	36.17 ⁴⁶
19.1	50.703 ²⁰⁴	20.87 ²⁶⁹	35.936 ²¹²	26.81 ¹⁹¹	21.581 ²⁵⁰	35.83 ³⁴
29.0	50.868 ¹⁶⁵	23.62 ²⁷⁵	36.114 ¹⁷⁸	28.71 ¹⁹⁰	21.795 ²¹⁴	35.64 ¹⁹
July 9.0	50.989 ¹²¹	26.36 ²⁷⁴	36.253 ¹³⁹	30.53 ¹⁸²	21.968 ¹⁷³	35.61 ³
19.0	51.065 ⁷⁶	29.02 ²⁶⁶	36.351 ⁹⁸	32.26 ¹⁷³	22.096 ¹²⁸	35.72 ¹¹
29.0	51.093 ²⁸	31.53 ²⁵¹	36.405 ⁵⁴	33.83 ¹⁵⁷	22.175 ⁷⁹	35.96 ²⁴
Aug. 7.9	51.074 ¹⁹	33.85 ²³²	36.416 ¹¹	35.23 ¹⁴⁰	22.206 ³¹	36.32 ³⁶
17.9	51.010 ⁶⁴	35.92 ²⁰⁷	36.383 ³³	36.43 ¹²⁰	22.189 ¹⁷	36.77 ⁴⁵
27.9	50.905 ¹⁰⁵	37.70 ¹⁷⁸	36.312 ⁷¹	37.41 ⁹⁸	22.126 ⁶³	37.28 ⁵¹
Sept. 6.9	50.762 ¹⁴³	39.16 ¹⁴⁶	36.206 ¹⁰⁶	38.17 ⁷⁶	22.024 ¹⁰²	37.82 ⁵⁴
16.8	50.590 ¹⁷²	40.28 ¹¹²	36.071 ¹³⁵	38.70 ⁵³	21.890 ¹³⁴	38.35 ⁵³
26.8	50.397 ¹⁹³	41.02 ⁷⁴	35.916 ¹⁵⁵	38.99 ²⁹	21.731 ¹⁵⁹	38.84 ⁴⁹
Oct. 6.8	50.191 ²⁰⁶	41.38 ³⁶	35.750 ¹⁶⁶	39.04 ⁵	21.558 ¹⁷³	39.27 ⁴³
16.7	49.982 ²³⁹	41.34 ⁴	35.580 ¹⁷⁰	38.85 ¹⁹	21.382 ¹⁷⁶	39.62 ³⁵
26.7	49.780 ²⁰²	40.90 ⁴⁴	35.418 ¹⁶²	38.43 ⁴²	21.213 ¹⁶⁹	39.88 ²⁶
Nov. 5.7	49.593 ¹⁸⁷	40.05 ⁸⁵	35.272 ¹⁴⁶	37.77 ⁶⁶	21.062 ¹⁵¹	40.04 ¹⁶
15.7	49.431 ¹⁶²	38.81 ¹²⁴	35.149 ¹²³	36.89 ⁸⁸	20.938 ¹²⁴	40.10 ⁶
25.6	49.301 ¹³⁰	37.20 ¹⁶¹	35.056 ⁹³	35.80 ¹⁰⁹	20.849 ⁸⁹	40.07 ³
Dec. 5.6	49.208 ⁹³	35.25 ¹⁹⁵	34.999 ⁵⁷	34.51 ¹²⁹	20.799 ⁵⁰	39.96 ¹¹
15.6	49.156 ⁵²	33.01 ²²⁴	34.979 ²⁰	33.06 ¹⁴⁵	20.793 ⁶	39.80 ¹⁶
25.6	49.148 ⁸	30.55 ²⁴⁶	34.999 ²⁰	31.49 ¹⁵⁷	20.832 ³⁹	39.58 ²²
35.5	49.184 ³⁶	27.93 ²⁶²	35.059 ⁶⁰	29.83 ¹⁶⁶	20.914 ⁸²	39.32 ²⁶
Mean Place	48.982	26.68	34.266	29.84	19.651	37.71
Sec δ , Tan δ	1.131	+0.527	1.008	+0.127	1.104	-0.467
L α , L δ	-0.01	+0.1	0.00	+0.2	+0.01	+0.2
ω α , ω δ	-0.01	-0.9	0.00	-0.9	+0.01	-0.9
Authority and Catalogue No.	A. E.	1193		1197	A. E.	1198

APPARENT PLACES OF STARS, 1928.

403

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	54 Sagittarii.		f Sagittarii.		δ Cygni.	
	5.45	Ko	5.06	Ko	2.98	Ao
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 19 36	^m 16 27	^h 19 42	^m 19 56	^h 19 42	^m 44 56
Jan. 1.5	33.493 ^s	41.01 ["]	07.298 ^s	15.14 ["]	40.900 ^s	74.34 ["]
11.5	33.588 ⁹⁵	41.27 ²⁶	07.388 ⁹⁰	15.18 ⁴	40.911 ¹¹	71.18 ³¹⁶
21.5	33.720 ¹³²	41.50 ²³	07.517 ¹²⁹	15.18 ¹⁶⁴	40.977 ⁶⁶	67.96 ³²¹
31.5	33.886 ¹⁶⁶	41.67 ¹⁷	07.681 ¹⁶⁴	15.11 ⁷	41.095 ¹¹⁸	64.79 ³¹⁷
Feb. 10.4	34.082 ¹⁹⁶	41.77 ¹⁰	07.876 ¹⁹⁵	14.97 ¹⁴	41.264 ¹⁶⁹	61.81 ²⁹⁸
20.4	34.306 ²²⁴	41.75 ²	08.099 ²²³	14.75 ²²	41.479 ²¹⁵	59.12 ²⁶⁹
Mar. 1.4	34.553 ²⁴⁷	41.61 ¹⁴	08.347 ²⁴⁸	14.41 ³⁴	41.736 ²⁵⁷	56.84 ²²⁸
11.4	34.821 ²⁶⁸	41.33 ²⁸	08.617 ²⁷⁰	13.97 ⁴⁴	42.029 ²⁹³	55.04 ¹⁸⁰
21.3	35.106 ²⁸⁵	40.90 ⁴³	08.905 ²⁸⁸	13.41 ⁵⁶	42.352 ³²³	53.79 ¹²⁵
31.3	35.406 ³⁰⁰	40.32 ⁵⁸	09.208 ³⁰³	12.73 ⁶⁸	42.698 ³⁴⁶	53.14 ⁶⁵
Apr. 10.3	35.717 ³¹¹	39.61 ⁷¹	09.523 ³¹⁵	11.95 ⁷⁸	43.059 ³⁶¹	53.10 ⁴
20.2	36.033 ³¹⁶	38.78 ⁸³	09.846 ³²³	11.10 ⁸⁵	43.426 ³⁶⁷	53.66 ⁵⁶
30.2	36.351 ³¹⁸	37.88 ⁹⁰	10.171 ³²⁵	10.20 ⁹⁰	43.792 ³⁶⁶	54.80 ¹¹⁴
May 10.2	36.666 ³¹⁵	36.92 ⁹⁶	10.493 ³²²	09.28 ⁹²	44.146 ³⁵⁴	56.48 ¹⁶⁸
20.2	36.971 ³⁰⁵	35.95 ⁹⁷	10.807 ³¹⁴	08.38 ⁹⁰	44.481 ³³⁵	58.62 ²¹⁴
30.1	37.261 ²⁹⁰	35.00 ⁹⁵	11.106 ²⁹⁹	07.54 ⁸⁴	44.789 ³⁰⁸	61.16 ²⁵⁴
June 9.1	37.529 ²⁶⁸	34.10 ⁹⁰	11.382 ²⁷⁶	06.77 ⁷⁷	45.061 ²⁷²	64.00 ²⁸⁴
19.1	37.768 ²³⁹	33.31 ⁷⁹	11.631 ²⁴⁹	06.12 ⁶⁵	45.290 ²²⁹	67.07 ³⁰⁷
29.1	37.973 ²⁰⁵	32.62 ⁶⁹	11.846 ²¹⁵	05.61 ⁵¹	45.471 ¹⁸¹	70.28 ³²¹
July 9.0	38.139 ¹⁶⁶	32.06 ⁵⁶	12.020 ¹⁷⁴	05.24 ³⁷	45.599 ¹²⁸	73.55 ³²⁷
19.0	38.262 ¹²³	31.65 ⁴¹	12.152 ¹³²	05.01 ²³	45.671 ⁷²	76.78 ³²³
29.0	38.340 ⁷⁸	31.39 ²⁶	12.237 ⁸⁵	04.94 ⁷	45.686 ¹⁵	79.92 ³¹⁴
Aug. 7.9	38.371 ³¹	31.26 ¹³	12.275 ³⁸	05.00 ⁶	45.644 ⁴²	82.88 ²⁹⁶
17.9	38.357 ¹⁴	31.26	12.266 ⁹	05.18 ¹⁸	45.547 ⁹⁷	85.59 ²⁷⁷
27.9	38.300 ⁵⁷	31.36 ¹⁰	12.213 ⁵³	05.46 ²⁸	45.400 ¹⁴⁷	88.00 ²⁴¹
Sept. 6.9	38.206 ⁹⁴	31.56 ²⁰	12.121 ⁹²	05.81 ³⁵	45.209 ¹⁹¹	90.06 ²⁰⁶
16.8	38.080 ¹²⁶	31.82 ²⁶	11.966 ¹²⁵	06.20 ³⁹	44.980 ²²⁹	91.73 ¹⁶⁷
26.8	37.932 ¹⁴⁸	32.12 ³⁰	11.847 ¹⁴⁹	06.59 ³⁹	44.723 ²⁵⁷	92.97 ¹²⁴
Oct. 6.8	37.770 ¹⁶²	32.44 ³²	11.683 ¹⁶⁴	06.99 ⁴⁰	44.448 ²⁷⁵	93.76 ⁷⁹
16.8	37.604 ¹⁶⁶	32.78 ³⁴	11.515 ¹⁶⁸	07.36 ³⁷	44.165 ²⁸³	94.05 ²⁰
26.7	37.445 ¹⁵⁹	33.10 ³²	11.352 ¹⁶³	07.69 ³³	43.885 ²⁸⁰	93.85 ²⁰
Nov. 5.7	37.302 ¹⁴³	33.42 ³²	11.204 ¹⁴⁸	07.97 ²⁸	43.618 ²⁶⁷	93.15 ⁷⁰
15.7	37.183 ¹¹⁹	33.73 ³¹	11.081 ¹²³	08.20 ²³	43.375 ²⁴³	91.95 ¹²⁰
25.6	37.096 ⁸⁷	34.03 ³⁰	10.989 ⁹²	08.39 ¹⁹	43.165 ²¹⁰	90.27 ¹⁶⁸
Dec. 5.6	37.046 ⁵⁰	34.32 ²⁹	10.934 ⁵⁵	08.53 ¹⁴	42.995 ¹⁷⁰	88.15 ²¹²
15.6	37.037 ⁹	34.61 ²⁹	10.920 ¹⁴	08.64 ¹¹	42.871 ¹²⁴	85.64 ²⁵¹
25.6	37.069 ³²	34.88 ²⁷	10.947 ²⁷	08.71 ⁷	42.797 ⁷⁴	82.81 ²⁸³
35.5	37.141 ⁷²	35.15 ²⁷	11.016 ⁶⁹	08.75 ⁴	42.776 ²¹	79.76 ³⁰⁵
Mean Place	35.967	34.11	09.809	07.68	43.397	75.41
Sec δ, Tan δ	1.043	-0.295	1.064	-0.363	1.413	+0.998
L α, L δ	+0.01	+0.2	+0.01	+0.2	-0.02	+0.2
ω α, ω δ	+0.01	-0.9	+0.01	-0.9	-0.03	-0.9
Authority and Catalogue No.	1203		1211		A. E.	1213

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect	γ Aquilæ.		α Aquilæ.		ι Sagittarii.	
	2.80	K 2	0.89	A 5	4.21	K c
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 19 42	^m 10 25	^h 19 47	^m 8 40	^h 19 50	^m 42 03
Jan. 1.5	47.993 ^s	67.73 ["]	13.934 ^s	32.77 ["]	14.899 ^s	41.43 ["]
11.5	47.968 ⁶⁵	65.91 ¹⁸²	13.998 ⁶⁴	31.07 ¹⁷⁰	14.995 ⁹⁶	40.09 ¹³⁴
21.5	48.070 ¹⁰²	64.10 ¹⁸¹	14.101 ¹⁰³	29.38 ¹⁶⁹	15.141 ¹⁴⁶	38.69 ¹⁴⁰
31.5	48.207 ¹³⁷	62.37 ¹⁷³	14.238 ¹³⁷	27.77 ¹⁶¹	15.332 ¹⁹¹	37.25 ¹⁴⁴
Feb. 10.4	48.375 ¹⁶⁸	60.80 ¹⁵⁷	14.405 ¹⁶⁷	26.33 ¹⁴⁴	15.564 ²³²	35.80 ¹⁴⁵
20.4	48.572 ¹⁰⁷	59.45 ¹³⁵	14.601 ¹⁹⁶	25.11 ¹²²	15.834 ²⁷⁰	34.38 ¹⁴²
Mar. 1.4	48.794 ²²²	58.38 ¹⁰⁷	14.823 ²²²	24.15 ⁹⁶	16.138 ³⁰⁴	32.98 ¹⁴⁰
11.4	49.039 ²⁴⁵	57.65 ⁷³	15.068 ²⁴⁵	23.50 ⁶⁵	16.468 ³³⁰	31.65 ¹³³
21.3	49.303 ²⁶⁴	57.29 ³⁶	15.332 ²⁶⁴	23.24 ²⁶	16.823 ³⁵⁵	30.40 ¹²⁵
31.3	49.582 ²⁷⁹	57.33 ⁴	15.611 ²⁷⁹	23.32 ⁸	17.198 ³⁷⁵	29.24 ¹¹⁶
Apr. 10.3	49.873 ²⁹¹	57.76 ⁴³	15.902 ²⁹¹	23.79 ⁴⁷	17.589 ³⁹¹	28.21 ¹⁰³
20.2	50.171 ²⁹⁸	58.56 ⁸⁰	16.200 ²⁹⁸	24.63 ⁸⁴	17.988 ³⁹⁹	27.32 ⁸⁹
30.2	50.470 ²⁹⁹	59.71 ¹¹⁵	16.501 ³⁰¹	25.78 ¹¹⁵	18.392 ⁴⁰⁴	26.61 ⁷¹
May 10.2	50.766 ²⁹⁶	61.16 ¹⁴⁵	16.798 ²⁹⁷	27.24 ¹⁴⁶	18.794 ⁴⁰²	26.10 ⁵¹
20.2	51.052 ²⁸⁶	62.86 ¹⁷⁰	17.085 ²⁸⁷	28.91 ¹⁶⁷	19.185 ³⁹¹	25.80 ³⁰
30.1	51.322 ²⁷⁰	64.75 ¹⁸⁹	17.357 ²⁷²	30.77 ¹⁸⁶	19.558 ³⁷³	25.73 ⁷
June 9.1	51.570 ²⁴⁸	66.76 ²⁰¹	17.607 ²⁵⁰	32.77 ²⁰⁰	19.905 ³⁴⁷	25.89 ¹⁶
19.1	51.790 ²²⁰	68.83 ²⁰⁷	17.832 ²²⁵	34.80 ²⁰³	20.219 ³¹⁴	26.30 ⁴¹
29.1	51.976 ¹⁸⁶	70.91 ²⁰⁸	18.021 ¹⁸⁹	36.81 ²⁰¹	20.491 ²⁷²	26.93 ⁶³
July 9.0	52.124 ¹⁴⁸	72.94 ²⁰³	18.174 ¹⁵³	38.75 ¹⁹⁴	20.713 ²²²	27.78 ⁸⁵
19.0	52.230 ¹⁰⁶	74.86 ¹⁹²	18.285 ¹¹¹	40.65 ¹⁹⁰	20.882 ¹⁶⁹	28.81 ¹⁰³
29.0	52.293 ⁶³	76.65 ¹⁷⁹	18.349 ⁶⁴	42.36 ¹⁷¹	20.994 ¹¹²	29.98 ¹¹⁷
Aug. 7.9	52.311 ¹⁸	78.26 ¹⁶¹	18.372 ²³	43.87 ¹⁵¹	21.046 ⁵²	31.26 ¹²⁸
17.9	52.286 ²⁵	79.66 ¹⁴⁰	18.353 ¹⁹	45.19 ¹³²	21.040 ⁶	32.60 ¹³⁴
27.9	52.221 ⁶⁵	80.83 ¹¹⁷	18.294 ⁵⁹	46.32 ¹¹³	20.978 ⁶²	33.93 ¹³³
Sept. 6.9	52.120 ¹⁰¹	81.76 ⁹³	18.198 ⁹⁶	47.18 ⁸⁶	20.866 ¹¹²	35.20 ¹²⁷
16.8	51.989 ¹³¹	82.44 ⁶⁸	18.071 ¹²⁷	47.80 ⁶²	20.711 ¹⁵⁵	36.35 ¹¹⁵
26.8	51.835 ¹⁵⁴	82.86 ⁴²	17.921 ¹⁵⁰	48.18 ³⁸	20.524 ¹⁸⁷	37.34 ⁹⁹
Oct. 6.8	51.668 ¹⁶⁷	83.02 ¹⁶	17.760 ¹⁶¹	48.35 ¹⁷	20.315 ²⁰⁹	38.11 ⁷⁷
16.8	51.497 ¹⁷¹	82.91 ¹¹	17.593 ¹⁶⁷	48.23 ¹²	20.096 ²¹⁹	38.63 ⁵²
26.7	51.330 ¹⁶⁷	82.54 ³⁷	17.428 ¹⁶⁵	47.85 ³⁸	19.882 ²¹⁴	38.89 ²⁶
Nov. 5.7	51.177 ¹⁵³	81.92 ⁶²	17.278 ¹⁵⁰	47.25 ⁶⁰	19.684 ¹⁹⁸	38.85 ⁴
15.7	51.046 ¹³¹	81.04 ⁸⁸	17.147 ¹³¹	46.42 ⁸³	19.514 ¹⁷⁰	38.54 ³¹
25.6	50.943 ¹⁰³	79.92 ¹¹²	17.047 ¹⁰⁰	45.35 ¹⁰⁷	19.380 ¹³⁴	37.97 ⁵⁷
Dec 5.6	50.873 ⁷⁰	78.58 ¹³⁴	16.980 ⁶⁷	44.08 ¹²⁷	19.293 ⁸⁷	37.16 ⁸¹
15.6	50.840 ³¹	77.05 ¹⁵³	16.948 ³²	42.67 ¹⁴¹	19.256 ³⁷	36.15 ¹⁰¹
25.6	50.845 ⁵	75.38 ¹⁶⁷	16.955 ⁷	41.10 ¹⁵⁷	19.270 ¹⁴	34.98 ¹¹⁷
35.5	50.890 ⁴⁵	73.61 ¹⁷⁷	17.001 ⁴⁶	39.45 ¹⁶⁵	19.337 ⁶⁷	33.67 ¹³¹
Mean Place	50.164	72.24	16.195	37.60	17.938	31.70
Sec δ , Tan δ	1.017	+0.184	1.012	+0.153	1.347	-0.902
L α , L δ	0.00	+0.2	0.00	+0.2	+0.02	+0.2
ω α , ω δ	-0.01	-0.9	0.00	-0.9	+0.03	-0.9
Authority and Catalogue No.	A. E.	1214	A. E.	1218		1221

No. 1218 corrected for a parallax of 0".20.

APPARENT PLACES OF STARS, 1928.

405

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Aquilæ.		γ Sagittarii.		ϵ Sagittarii.	
	3.90	K o	5.05	A o	4.60	M b
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 19 51	[°] 13	^h ^m 19 53	[°] 40	^h ^m 19 58	[°] 54
Jan. 1.6	44.301 ^s 61	27.88 ["] 157	49.662 ^s 75	69.00 ["] 27	11.397 ^s 80	49.56 ["] 50
11.5	44.362 97	26.31 ["] 156	49.737 114	69.27 22	11.477 119	49.06 56
21.5	44.459 131	24.75 ["] 149	49.851 147	69.49 16	11.596 157	48.50 62
31.5	44.590 162	23.26 ["] 134	49.998 178	69.65 6	11.753 191	47.88 69
Feb. 10.4	44.752 190	21.92 ["] 114	50.176 207	69.71 5	11.944 222	47.19 75
20.4	44.942 216	20.78 ["] 89	50.383 232	69.66 19	12.166 251	46.44 81
Mar. 1.4	45.158 239	19.89 ["] 58	50.615 255	69.47 34	12.417 275	45.63 87
11.4	45.397 259	19.31 ["] 23	50.870 275	69.13 50	12.692 297	44.76 93
21.3	45.656 276	19.08 ["] 11	51.145 291	68.63 66	12.989 315	43.83 96
31.3	45.932 288	19.19 47	51.436 305	67.97 80	13.304 330	42.87 98
Apr. 10.3	46.220 297	19.66 ["] 81	51.741 313	67.17 93	13.634 340	41.89 98
20.3	46.517 300	20.47 ["] 112	52.054 319	66.24 101	13.974 346	40.91 94
30.2	46.817 298	21.59 ["] 138	52.373 318	65.23 107	14.320 345	39.97 88
May 10.2	47.115 290	22.97 ["] 160	52.691 310	64.16 109	14.665 339	39.09 79
20.2	47.405 276	24.57 ["] 176	53.001 298	63.07 108	15.004 326	38.30 67
30.1	47.681 256	26.33 ["] 186	53.299 277	61.99 100	15.330 304	37.63 51
June 9.1	47.937 229	28.19 ["] 191	53.576 252	60.99 92	15.634 277	37.12 35
19.1	48.166 196	30.10 ["] 189	53.828 218	60.07 81	15.911 242	36.77 17
29.1	48.362 159	31.99 ["] 183	54.046 181	59.26 66	16.153 202	36.60 1
July 9.0	48.521 118	33.82 ["] 172	54.227 139	58.60 51	16.355 156	36.61 19
19.0	48.639 75	35.54 ["] 158	54.366 93	58.09 36	16.511 108	36.80 35
29.0	48.714 30	37.12 ["] 141	54.459 46	57.73 20	16.619 57	37.15 49
Aug. 8.0	48.744 13	38.53 ["] 121	54.505 2	57.53 5	16.676 7	37.64 61
17.9	48.731 54	39.74 ["] 100	54.507 42	57.48 6	16.683 40	38.25 68
27.9	48.677 91	40.74 ["] 78	54.465 82	57.54 17	16.643 84	38.93 72
Sept. 6.9	48.586 121	41.52 ["] 55	54.383 115	57.71 26	16.559 121	39.65 71
16.8	48.465 145	42.07 ["] 32	54.268 140	57.97 32	16.438 149	40.36 67
26.8	48.320 159	42.39 ["] 9	54.128 156	58.29 35	16.289 169	41.03 60
Oct. 6.8	48.161 166	42.48 ["] 13	53.972 163	58.64 37	16.120 177	41.63 50
16.8	47.995 162	42.35 ["] 36	53.809 159	59.01 38	15.943 174	42.13 37
26.7	47.833 149	41.99 ["] 58	53.650 146	59.39 37	15.769 161	42.50 23
Nov. 5.7	47.684 130	41.41 ["] 79	53.504 125	59.76 36	15.608 138	42.73 9
15.7	47.554 102	40.62 ["] 99	53.379 96	60.12 34	15.470 108	42.82 4
25.7	47.452 70	39.63 ["] 117	53.283 61	60.46 33	15.362 71	42.78 17
Dec. 5.6	47.382 34	38.46 ["] 133	53.222 24	60.79 32	15.291 30	42.61 29
15.6	47.348 2	37.13 ["] 145	53.198 15	61.11 30	15.261 12	42.32 38
25.6	47.350 41	35.68 ["] 152	53.213 55	61.41 28	15.273 56	41.94 47
35.5	47.391	34.16 ["]	53.268	61.69	15.329	41.47
Mean Place	46.559	32.95	52.086	61.38	14.010	40.45
Sec δ , Tan δ	1.006	+0.109	1.039	-0.281	1.132	-0.530
L α , L δ	0.00	+0.2	+0.01	+0.2	+0.01	+0.2
ω α , ω δ	0.00	-0.9	+0.01	-0.9	+0.02	-0.9
Authority and Catalogue No.	A. E.	1222		1227	A. N.	1231

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	δ Pavonis.		θ Aquilæ.		4 Capricorni.	
	3.64	G 5	3.37	A 0	5.96	K 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 20 01	^m 66 21	^h 20 07	^m 1 02	^h 20 13	^m 22 01
Jan. 1.6	35.90	75.27	33.148	16.38	45.261	70.46
11.5	35.09	72.67	33.200	17.49	45.320	70.30
21.5	36.17	69.99	33.288	18.57	45.417	70.07
31.5	36.45	67.29	33.408	19.58	45.550	69.75
Feb. 10.5	36.81	64.65	33.560	20.46	45.716	69.35
20.4	37.25	62.13	33.741	21.17	45.913	68.85
Mar. 1.4	37.76	59.78	33.947	21.65	46.137	68.23
11.4	38.32	57.65	34.178	21.89	46.387	67.51
21.3	38.93	55.78	34.430	21.85	46.660	66.67
31.3	39.58	54.21	34.700	21.52	46.953	65.74
Apr. 10.3	40.26	52.97	34.986	20.89	47.263	64.72
20.3	40.96	52.09	35.283	20.00	47.586	63.64
30.2	41.66	51.58	35.586	18.87	47.916	62.53
May 10.2	42.35	51.46	35.890	17.54	48.249	61.43
20.2	43.03	51.73	36.189	16.05	48.578	60.37
30.2	43.67	52.40	36.476	14.45	48.897	59.39
June 9.1	44.27	53.45	36.745	12.80	49.199	58.51
19.1	44.81	54.85	36.990	11.15	49.474	57.78
29.1	45.27	56.57	37.204	09.54	49.718	57.22
July 9.0	45.65	58.57	37.383	08.02	49.925	56.83
19.0	45.93	60.78	37.521	06.63	50.089	56.61
29.0	46.11	63.15	37.616	05.38	50.207	56.57
Aug. 8.0	46.19	65.59	37.667	04.31	50.277	56.70
17.9	46.16	68.02	37.673	03.42	50.298	56.98
27.9	46.03	70.37	37.638	02.72	50.273	57.38
Sept. 6.9	45.81	72.53	37.564	02.22	50.205	57.86
16.9	45.51	74.43	37.457	01.90	50.101	58.40
26.8	45.15	76.00	37.325	01.76	49.967	58.96
Oct. 6.8	44.74	77.16	37.176	01.79	49.814	59.51
16.8	44.30	77.86	37.019	01.98	49.650	60.01
26.7	43.86	78.08	36.863	02.32	49.486	60.46
Nov. 5.7	43.44	77.80	36.716	02.79	49.332	60.82
15.7	43.05	77.03	36.588	03.42	49.196	61.10
25.7	42.73	75.79	36.485	04.17	49.086	61.30
Dec. 5.6	42.49	74.13	36.411	05.03	49.010	61.40
15.6	42.33	72.11	36.372	06.00	48.969	61.43
25.6	42.27	69.80	36.368	07.03	48.968	61.37
35.6	42.30	67.28	36.402	08.11	49.006	61.24
Mean Place	40.791	63.30	35.407	10.12	47.719	61.15
Sec δ , Tan δ	2.495	-2.285	1.000	-0.018	1.079	-0.405
L a , L δ	+0.05	+0.2	0.00	+0.2	+0.01	+0.2
ω a , ω δ	+0.08	-0.9	0.00	-0.9	+0.01	-0.8
Authority and Catalogue No.	A. E.	1233	A. E.	1237		1250

APPARENT PLACES OF STARS, 1928.

407

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α^2 Capricorni.		β Capricorni.		γ Cygni.	
	3.77	G 5	3.25	G o-A o	2.32	F 8 p
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 20 ^m 14	[°] 12 ['] 46	^h 20 ^m 16	[°] 15 ['] 00	^h 20 ^m 19	[°] 40 ['] 01
Jan. 1.6	01.320 ^s	17.10	55.706 ^s	44.22	36.230 ^s	30.94
11.5	01.375 ⁵⁵	17.50 ⁴⁰	55.759 ⁵³	44.49 ²⁷	36.209 ²¹	28.10 ²⁸⁴
21.5	01.465 ⁹⁰	17.85 ³⁵	55.848 ⁸⁹	44.69 ²⁰	36.236 ²⁷	25.15 ²⁹⁵
31.5	01.589 ¹²⁴	18.11 ²⁶	55.971 ¹²³	44.80 ¹¹	36.310 ⁷⁴	22.19 ²⁹⁶
Feb. 10.5	01.745 ¹⁵⁶	18.27 ¹⁶	56.125 ¹⁵⁴	44.81 ¹	36.430 ¹²⁰	19.35 ²⁸⁴
20.4	01.930 ¹⁸⁵	18.29 ²	56.309 ¹⁸⁴	44.70 ¹¹	36.594 ¹⁶⁴	16.73 ²⁶²
Mar. 1.4	02.142 ²¹²	18.16 ¹³	56.520 ²¹¹	44.43 ²⁷	36.800 ²⁰⁶	14.43 ²³⁰
11.4	02.378 ²³⁶	17.85 ³¹	56.757 ²³⁷	44.00 ⁴³	37.045 ²⁴⁵	12.56 ¹⁸⁷
21.3	02.636 ²⁵⁸	17.35 ⁵⁰	57.016 ²⁵⁹	43.41 ⁵⁹	37.324 ²⁷⁹	11.18 ¹³⁸
31.3	02.913 ²⁷⁷	16.67 ⁶⁸	57.295 ²⁷⁹	42.65 ⁷⁶	37.630 ³⁰⁶	10.34 ⁸⁴
Apr. 10.3	03.207 ²⁹⁴	15.81 ⁸⁶	57.591 ²⁹⁶	41.73 ⁹²	37.959 ³²⁹	10.08 ²⁶
20.3	03.513 ³⁰⁶	14.80 ¹⁰¹	57.900 ³⁰⁹	40.67 ¹⁰⁶	38.303 ³⁴⁴	10.39 ³¹
30.2	03.827 ³¹⁴	13.66 ¹¹⁴	58.217 ³¹⁷	39.53 ¹¹⁴	38.653 ³⁵⁰	11.27 ⁸⁸
May 10.2	04.143 ³¹⁶	12.43 ¹²³	58.536 ³¹⁹	38.32 ¹²¹	39.003 ³⁵⁰	12.68 ¹⁴¹
20.2	04.456 ³¹³	11.16 ¹²⁷	58.853 ³¹⁷	37.08 ¹²⁴	39.343 ³⁴⁰	14.56 ¹⁸⁸
30.2	04.758 ³⁰²	09.88 ¹²⁸	59.160 ³⁰⁷	35.86 ¹²²	39.664 ³²¹	16.85 ²²⁹
June 9.1	05.043 ²⁸⁵	08.64 ¹²⁴	59.450 ²⁹⁰	34.70 ¹¹⁶	39.959 ²⁹⁵	19.48 ²⁶³
19.1	05.305 ²⁶²	07.48 ¹¹⁶	59.716 ²⁶⁶	33.63 ¹⁰⁷	40.221 ²⁶²	22.37 ²⁸⁹
29.1	05.536 ²³¹	06.43 ¹⁰⁵	59.952 ²³⁶	32.68 ⁹⁵	40.441 ²²⁰	25.43 ³⁰⁶
July 9.0	05.731 ¹⁹⁵	05.52 ⁹¹	60.152 ²⁰⁰	31.88 ⁸⁰	40.615 ¹⁷⁴	28.59 ³¹⁶
19.0	05.886 ¹⁵⁵	04.77 ⁷⁵	60.311 ¹⁵⁹	31.24 ⁶⁴	40.739 ¹²⁴	31.77 ³¹⁸
29.0	05.997 ¹¹¹	04.18 ⁵⁹	60.426 ¹¹⁵	30.78 ⁴⁶	40.809 ⁷⁰	34.89 ³¹²
Aug. 8.0	06.061 ⁶⁴	03.76 ⁴²	60.495 ⁶⁹	30.49 ²⁹	40.826 ¹⁷	37.88 ²⁹⁹
17.9	06.080 ¹⁹	03.51 ²⁵	60.517 ²²	30.37 ¹²	40.790 ³⁶	40.67 ²⁷⁹
27.9	06.055 ²⁵	03.42 ⁹	60.495 ²²	30.39 ²	40.703 ⁸⁷	43.22 ²⁵⁵
Sept. 6.9	05.989 ⁶⁶	03.47 ⁵	60.432 ⁶³	30.54 ¹⁵	40.570 ¹³³	45.46 ²²⁴
16.9	05.889 ¹⁰⁰	03.63 ¹⁶	60.333 ⁹⁹	30.79 ²⁵	40.398 ¹⁷²	47.36 ¹⁹⁰
26.8	05.761 ¹²⁸	03.88 ²⁵	60.207 ¹²⁶	31.12 ³³	40.194 ²⁰⁴	48.87 ¹⁵¹
Oct. 6.8	05.614 ¹⁴⁷	04.20 ³²	60.061 ¹⁴⁶	31.50 ³⁸	39.967 ²²⁷	49.96 ¹⁰⁹
16.8	05.458 ¹⁵⁶	04.58 ³⁸	59.904 ¹⁵⁷	31.91 ⁴¹	39.726 ²⁴¹	50.61 ⁶⁵
26.7	05.302 ¹⁵⁶	04.99 ⁴¹	59.747 ¹⁵⁷	32.34 ⁴³	39.481 ²⁴⁵	50.79 ¹⁸
Nov. 5.7	05.155 ¹⁴⁷	05.42 ⁴³	59.599 ¹⁴⁸	32.76 ⁴²	39.241 ²⁴⁰	50.49 ³⁰
15.7	05.026 ¹²⁹	05.86 ⁴⁴	59.468 ¹³¹	33.17 ⁴¹	39.018 ²²³	49.71 ⁷⁸
25.7	04.921 ¹⁰⁵	06.31 ⁴⁵	59.362 ¹⁰⁶	33.57 ⁴⁰	38.818 ²⁰⁰	48.47 ¹²⁴
Dec. 5.6	04.848 ⁷³	06.75 ⁴⁴	59.287 ⁷⁵	33.94 ³⁷	38.648 ¹⁷⁰	46.79 ¹⁶⁸
15.6	04.809 ³⁹	07.19 ⁴⁴	59.246 ⁴¹	34.28 ³⁴	38.515 ¹³³	44.70 ²⁰⁹
25.6	04.806 ³	07.62 ⁴³	59.241 ⁵	34.59 ³¹	38.423 ⁹²	42.27 ²⁴³
35.6	04.841 ³⁵	08.03 ⁴¹	59.274 ³³	34.87 ²⁸	38.376 ⁴⁷	39.57 ²⁷⁰
Mean Place	03.659	09.01	58.059	35.71	38.580	31.26
Sec δ , Tan δ	1.025	-0.227	1.035	-0.268	1.306	+0.840
L α , L δ	+0.01	+0.2	+0.01	+0.2	-0.02	+0.2
ω α , ω δ	+0.01	-0.8	+0.01	-0.8	-0.03	-0.8
Authority and Catalogue No.	A. E.	1251	A. N.	1252	A. E.	1255

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name.	α Pavonis.		ρ Capricorni.		ϵ Delphini.	
Mag. Spect.	2.12	B 3	5.66	F 0	3.98	B 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 20 19	^h ^m 56 57	^h ^m 20 24	^h ^m 18 03	^h ^m 20 29	^h ^m 11 03
Jan. 1.6	54.551 ⁵²	75.41 ²¹⁷	42.947 ⁴⁶	19.22 ⁶	44.183 ²¹	22.75 ¹⁶⁷
11.5	54.103 ¹²⁰	73.24 ²²⁹	42.993 ⁸³	19.28 ¹	44.204 ⁵⁵	21.08 ¹⁶⁸
21.5	54.223 ¹⁸⁶	70.95 ²³⁷	43.076 ¹¹⁷	19.27 ¹⁰	44.259 ⁸⁹	19.40 ¹⁶⁴
31.5	54.409	68.58	43.193	19.17	44.348	17.76
Feb. 10.5	54.655 ²⁴⁶	66.20 ²³⁸	43.343 ¹⁵⁰	18.97 ²⁰	44.470 ¹²²	16.24 ¹⁵²
20.4	54.957 ³⁰²	63.87 ²³³	43.523 ¹⁸⁰	18.64 ³³	44.623 ¹⁵³	14.91 ¹³³
Mar. 1.4	55.309 ³⁵²	61.62 ²²⁵	43.731 ²⁰⁸	18.18 ⁴⁶	44.806 ¹⁸³	13.84 ¹⁰⁷
11.4	55.706 ³⁹⁷	59.50 ²¹²	43.965 ²³⁴	17.58 ⁶⁰	45.016 ²¹⁰	13.08 ⁷⁶
21.4	56.142 ⁴³⁶	57.55 ¹⁹⁵	44.223 ²⁵⁸	16.83 ⁷⁵	45.252 ²³⁶	12.68 ⁴⁰
31.3	56.612 ⁴⁷⁰	55.82 ¹⁷³	44.503 ²⁸⁰	15.94 ⁸⁹	45.510 ²⁵⁸	12.65 ³
Apr. 10.3	57.108 ⁴⁹⁶	54.32 ¹⁵⁰	44.800 ²⁹⁷	14.92 ¹⁰²	45.787 ²⁷⁷	13.01 ³⁶
20.3	57.623 ⁵¹⁵	53.10 ¹²²	45.111 ³¹¹	13.80 ¹¹²	46.079 ²⁹²	13.75 ⁷⁴
30.2	58.150 ⁵²⁷	52.19 ⁹¹	45.433 ³²²	12.61 ¹¹⁹	46.381 ³⁰²	14.85 ¹¹⁰
May 10.2	58.679 ⁵²⁹	51.60 ⁵⁹	45.759 ³²⁶	11.39 ¹²²	46.686 ³⁰⁵	16.27 ¹⁴²
20.2	59.200 ⁵²¹	51.35 ²⁵	46.082 ³²³	10.17 ¹²²	46.988 ³⁰²	17.96 ¹⁶⁹
30.2	59.703 ⁵⁰³	51.46 ¹¹	46.397 ³¹⁵	09.00 ¹¹⁷	47.281 ²⁹³	19.86 ¹⁹⁰
June 9.1	60.176 ⁴⁷³	51.92 ⁴⁶	46.696 ²⁹⁹	07.91 ¹⁰⁹	47.558 ²⁷⁷	21.92 ²⁰⁶
19.1	60.609 ⁴³³	52.72 ⁸⁰	46.972 ²⁷⁶	06.93 ⁹⁸	47.812 ²⁵⁴	24.08 ²¹⁶
29.1	60.992 ³⁸³	53.85 ¹¹³	47.218 ²⁴⁶	06.10 ⁸³	48.037 ²²⁵	26.26 ²¹⁸
July 9.1	61.314 ³²²	55.27 ¹⁴²	47.428 ²¹⁰	05.43 ⁶⁷	48.226 ¹⁸⁹	28.42 ²¹⁶
19.0	61.568 ²⁵⁴	56.94 ¹⁶⁷	47.598 ¹⁷⁰	04.94 ⁴⁹	48.375 ¹⁴⁹	30.50 ²⁰⁸
29.0	61.748 ¹⁸⁰	58.81 ¹⁸⁷	47.723 ¹²⁵	04.64 ³⁰	48.482 ¹⁰⁷	32.45 ¹⁹⁵
Aug. 8.0	61.819 ¹⁰¹	60.82 ²⁰¹	47.801 ⁷⁸	04.51 ¹³	48.544 ⁶²	34.24 ¹⁷⁹
17.9	61.872 ²³	62.88 ²⁰⁶	47.832 ³¹	04.55 ⁴	48.561 ¹⁷	35.84 ¹⁶⁰
27.9	61.817 ⁵⁵	64.94 ²⁰⁶	47.816 ¹⁶	04.73 ¹⁸	48.536 ²⁵	37.22 ¹³⁸
Sept. 6.9	61.690 ¹²⁷	66.90 ¹⁹⁶	47.759 ⁵⁷	05.03 ³⁰	48.471 ⁶⁵	38.36 ¹¹⁴
16.9	61.500 ¹⁹⁰	68.70 ¹⁸⁰	47.665 ⁹⁴	05.42 ³⁹	48.371 ¹⁰⁰	39.24 ⁸⁸
26.8	61.257 ²⁴³	70.25 ¹⁵⁵	47.542 ¹²³	05.87 ⁴⁵	48.243 ¹²⁸	39.87 ⁶³
Oct. 6.8	60.976 ²⁸¹	71.48 ¹²³	47.397 ¹⁴⁵	06.35 ⁴⁸	48.096 ¹⁴⁷	40.24 ³⁷
16.8	60.671 ³⁰⁵	72.35 ⁸⁷	47.242 ¹⁵⁵	06.84 ⁴⁹	47.936 ¹⁶⁰	40.34 ¹⁰
26.8	60.361 ³¹⁰	72.82 ⁴⁷	47.083 ¹⁵⁹	07.31 ⁴⁷	47.774 ¹⁶²	40.18 ¹⁶
Nov. 5.7	60.060 ³⁰¹	72.86 ⁴	46.932 ¹⁵¹	07.74 ⁴³	47.618 ¹⁵⁶	39.76 ⁴²
15.7	59.785 ²⁷⁵	72.47 ³⁹	46.797 ¹³⁵	08.12 ³⁸	47.476 ¹⁴²	39.09 ⁶⁷
25.7	59.551 ²³⁴	71.66 ⁸¹	46.686 ¹¹¹	08.44 ³²	47.354 ¹²²	38.18 ⁹¹
Dec. 5.6	59.368 ¹⁸³	70.46 ¹²⁰	46.605 ⁸¹	08.71 ²⁷	47.258 ⁹⁶	37.04 ¹¹⁴
15.6	59.245 ¹²³	68.91 ¹⁵⁵	46.558 ⁴⁷	08.93 ²²	47.192 ⁶⁶	35.71 ¹³³
25.6	59.189 ⁵⁶	67.07 ¹⁸⁴	46.547 ¹¹	09.08 ¹⁵	47.159 ³³	34.22 ¹⁴⁹
35.6	59.202 ¹³	64.99 ²⁰⁸	46.574 ²⁷	09.17 ⁹	47.160 ¹	32.61 ¹⁶¹
Mean Place	57.754	62.20	45.312	09.94	46.347	27.43
Sec δ , Tan δ	1.834	-1.538	1.052	-0.326	1.019	+0.195
L α , L δ	+0.03	+0.2	+0.01	+0.2	0.00	+0.2
ω α , ω δ	+0.06	-0.8	+0.01	-0.8	-0.01	-0.8
Authority and Catalogue No.	A. E.	1256	A. N.	1258	A. E.	1267

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Indi.		α Delphini.		β Pavonis.	
	3.21	Ko	3.86	B 8	3.60	A 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 20 ^m 32	[°] 47 ['] 32	^h 20 ^m 36	[°] 15 ['] 39	^h 20 ^m 38	[°] 66 ['] 27
Jan. 1.6	27.590	51.01	15.425	21.96	24.98	63.64
11.6	27.629 ³⁹	49.34 ¹⁶⁷	15.434 ⁹	20.10 ¹⁸⁶	24.97 ¹	61.05 ²⁵⁹
21.5	27.721 ⁹²	47.53 ¹⁸¹	15.478 ⁴⁴	18.21 ¹⁸⁹	25.06 ⁹	58.29 ²⁷⁶
31.5	27.863 ¹⁴²	45.62 ¹⁹¹	15.557 ⁷⁹	16.35 ¹⁸⁶	25.24 ¹⁸	55.43 ²⁸⁶
Feb. 10.5	28.053 ¹⁹⁰	43.65 ¹⁹⁷	15.670 ¹¹³	14.59 ¹⁷⁶	25.50 ²⁶	52.54 ²⁸⁹
20.4	28.288 ²³⁵	41.66 ¹⁹⁹	15.815 ¹⁴⁵	13.03 ¹⁵⁶	25.85 ³⁵	49.69 ²⁸⁵
Mar. 1.4	28.565 ²⁷⁷	39.68 ¹⁹⁸	15.992 ¹⁷⁷	11.74 ¹²⁹	26.27 ⁴²	46.95 ²⁷⁴
11.4	28.879 ³¹⁴	37.75 ¹⁹³	16.197 ²⁰⁵	10.77 ⁹⁷	26.76 ⁴⁹	44.37 ²⁵⁸
21.4	29.227 ³⁴⁸	35.91 ¹⁸⁴	16.429 ²³²	10.17 ⁶⁰	27.30 ⁵⁴	42.00 ²³⁷
31.3	29.603 ³⁷⁶	34.19 ¹⁷²	16.686 ²⁵⁷	09.98 ¹⁹	27.89 ⁵⁹	39.89 ²¹¹
Apr. 10.3	30.005 ⁴⁰²	32.63 ¹⁵⁶	16.963 ²⁷⁷	10.22 ²⁴	28.53 ⁶⁴	38.09 ¹⁸⁰
20.3	30.426 ⁴²¹	31.25 ¹³⁸	17.256 ²⁹³	10.87 ⁶⁵	29.20 ⁶⁷	36.62 ¹⁴⁷
30.3	30.860 ⁴³⁴	30.07 ¹¹⁸	17.559 ³⁰³	11.91 ¹⁰⁴	29.89 ⁶⁹	35.53 ¹⁰⁹
May 10.2	31.300 ⁴⁴⁰	29.16 ⁹¹	17.867 ³⁰⁸	13.32 ¹⁴¹	30.58 ⁶⁹	34.84 ⁶⁹
20.2	31.737 ⁴³⁷	28.52 ⁶⁴	18.174 ³⁰⁷	15.04 ¹⁷²	31.27 ⁶⁹	34.55 ²⁹
30.2	32.163 ⁴²⁶	28.18 ³⁴	18.471 ²⁹⁷	17.01 ¹⁹⁷	31.94 ⁶⁷	34.69 ¹⁴
June 9.1	32.569 ⁴⁰⁶	28.14 ⁴	18.752 ²⁸¹	19.19 ²¹⁸	32.57 ⁶³	35.25 ⁵⁶
19.1	32.945 ³⁷⁶	28.41 ²⁷	19.010 ²⁵⁸	21.48 ²²⁹	33.15 ⁵⁸	36.22 ⁹⁷
29.1	33.281 ³³⁶	28.99 ⁵⁸	19.238 ²²⁸	23.84 ²³⁶	33.67 ⁵²	37.56 ¹³⁴
July 9.1	33.570 ²⁸⁹	29.86 ⁸⁷	19.431 ¹⁹³	26.21 ²³⁷	34.11 ⁴⁴	39.25 ¹⁶⁹
19.0	33.804 ²³⁴	30.99 ¹¹³	19.584 ¹⁵³	28.52 ²³¹	34.47 ³⁶	41.24 ¹⁹⁹
29.0	33.978 ¹⁷⁴	32.34 ¹³⁵	19.694 ¹¹⁰	30.71 ²¹⁹	34.73 ²⁶	43.46 ²²²
Aug. 8.0	34.088 ¹¹⁰	33.86 ¹⁵²	19.759 ⁶⁵	32.76 ²⁰⁵	34.73 ¹⁵	45.83 ²³⁷
18.0	34.133 ⁴⁵	35.50 ¹⁶⁴	19.778 ¹⁹	34.61 ¹⁸⁵	34.88 ⁵	48.29 ²⁴⁶
27.9	34.115 ¹⁸	37.19 ¹⁶⁹	19.754 ²⁴	36.24 ¹⁶³	34.88 ⁵	50.74 ²⁴⁵
Sept. 6.9	34.036 ⁷⁹	38.86 ¹⁶⁷	19.689 ⁶⁵	37.62 ¹³⁸	34.72 ¹⁶	53.08 ²³⁴
16.9	33.903 ¹³³	40.44 ¹⁵⁸	19.589 ¹⁰⁰	38.73 ¹¹¹	34.72 ²⁵	55.24 ²¹⁶
26.8	33.726 ¹⁷⁷	41.86 ¹⁴²	19.461 ¹²⁸	39.56 ⁸³	34.47 ³²	57.12 ¹⁸⁸
Oct. 6.8	33.516 ²¹⁰	43.07 ¹²¹	19.311 ¹⁵⁰	40.10 ⁵⁴	33.77 ³⁸	58.65 ¹⁵³
16.8	33.285 ²³¹	44.00 ⁹³	19.148 ¹⁶³	40.34 ²⁴	33.35 ⁴²	59.76 ¹¹¹
26.8	33.047 ²³⁸	44.61 ⁶¹	18.982 ¹⁶⁶	40.28 ⁶	32.91 ⁴⁴	60.40 ⁶⁴
Nov. 5.7	32.815 ²³²	44.88 ²⁷	18.819 ¹⁶³	39.92 ³⁶	32.47 ⁴⁴	60.53 ¹³
15.7	32.602 ²¹³	44.80 ⁸	18.669 ¹⁵⁰	39.27 ⁶⁵	32.05 ⁴²	60.15 ³⁸
25.7	32.420 ¹⁸²	44.37 ⁴³	18.539 ¹³⁰	38.33 ⁹⁴	31.68 ³⁷	59.26 ⁸⁹
Dec. 5.7	32.277 ¹⁴³	43.60 ⁷⁷	18.433 ¹⁰⁶	37.14 ¹¹⁹	31.37 ³¹	57.90 ¹³⁶
15.6	32.181 ⁹⁶	42.51 ¹⁰⁹	18.357 ⁷⁶	35.71 ¹⁴³	31.13 ²⁴	56.11 ¹⁷⁹
25.6	32.136 ⁴⁵	41.17 ¹³⁴	18.313 ⁴⁴	34.07 ¹⁶⁴	30.98 ¹⁵	53.94 ²¹⁷
35.6	32.145 ⁹	39.60 ¹⁵⁷	18.303 ¹⁰	32.29 ¹⁷⁸	30.92 ⁶	51.48 ²⁴⁶
Mean Place	30.655	37.55	17.572	25.84	29.529	48.26
Sec δ , Tan δ	1.481	-1.093	1.039	+0.280	2.504	-2.296
L α , L δ	+0.02	+0.2	-0.01	+0.2	+0.05	+0.3
ω α , ω δ	+0.04	-0.8	-0.01	-0.8	+0.10	-0.8
Authority and Catalogue No.	A. E.	1270	A. E.	1277	A. E.	1279

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name, Mag. Spect.	α Cygni.		ε Cygni.		ε Aquarii.	
	1.33	A 2 p	2.64	K o	3.83	A o
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 20 38	^o ['] 45 00	^h ^m 20 43	^o ['] 33 41	^h ^m 20 43	^o ['] 9 45
Jan. 1.6	56.151	81.46	15.545	58.37	44.556	45.87
11.6	56.092 ⁵⁹	78.63 ²⁸³	15.516 ²⁹	55.87 ²⁵⁰	44.580 ²⁴	46.39 ⁵²
21.5	56.083 ⁹	75.64 ²⁹⁹	15.528 ¹²	53.25 ²⁶²	44.639 ⁵⁹	46.85 ⁴⁶
31.5	56.124 ⁴¹	72.59 ³⁰⁵	15.585 ⁵⁷	50.60 ²⁶⁵	44.730 ⁹¹	47.21 ³⁶
Feb. 10.5	56.217 ⁹³	69.60 ²⁹⁹	15.677 ⁹²	48.02 ²⁵⁸	44.853 ¹²³	47.46 ²⁵
20.4	56.360 ¹⁴³	66.79 ²⁸¹	15.813 ¹³⁶	45.63 ²³⁹	45.006 ¹⁵³	47.56 ¹⁰
Mar. 1.4	56.551 ¹⁹¹	64.28 ²⁵¹	15.988 ¹⁷⁵	43.52 ²¹¹	45.187 ¹⁸¹	47.48 ⁸
11.4	56.787 ²³⁶	62.17 ²¹¹	16.200 ²¹²	41.79 ¹⁷³	45.396 ²⁰⁹	47.20 ²⁸
21.4	57.063 ²⁷⁶	60.52 ¹⁶⁵	16.446 ²⁴⁶	40.49 ¹³⁰	45.630 ²³⁴	46.71 ⁴⁹
31.3	57.375 ³¹²	59.41 ¹¹¹	16.721 ²⁷⁵	39.69 ⁸⁰	45.887 ²⁵⁷	46.00 ⁷¹
Apr. 10.3	57.714 ³³⁹	58.89 ⁵²	17.022 ³⁰¹	39.42 ²⁷	46.165 ²⁷⁸	45.08 ⁹²
20.3	58.074 ³⁶⁰	58.95 ⁶	17.341 ³¹⁹	39.69 ²⁷	46.460 ²⁹⁵	43.98 ¹¹⁰
30.3	58.445 ³⁷¹	59.60 ⁶⁵	17.673 ³³²	40.49 ⁸⁰	46.767 ³⁰⁷	42.72 ¹²⁶
May 10.2	58.818 ³⁷³	60.81 ¹²¹	18.008 ³³⁵	41.78 ¹²⁹	47.081 ³¹⁴	41.34 ¹³⁸
20.2	59.185 ³⁶⁷	62.54 ¹⁷³	18.341 ³³³	43.53 ¹⁷⁵	47.396 ³¹⁵	39.88 ¹⁴⁶
30.2	59.535 ³⁵⁰	64.72 ²¹⁸	18.662 ³²¹	45.67 ²¹⁴	47.705 ³⁰⁹	38.38 ¹⁵⁰
June 9.1	59.858 ³²³	67.29 ²⁵⁷	18.964 ³⁰²	48.13 ²⁴⁶	48.002 ²⁹⁷	36.90 ¹⁴⁸
19.1	60.147 ²⁸⁹	70.16 ²⁸⁷	19.238 ²⁷⁴	50.84 ²⁷¹	48.278 ²⁷⁶	35.48 ¹⁴²
29.1	60.395 ²⁴⁸	73.26 ³¹⁰	19.478 ²⁴⁰	53.74 ²⁹⁰	48.528 ²⁵⁰	34.16 ¹³²
July 9.1	60.595 ²⁰⁰	76.51 ³²⁵	19.677 ¹⁹⁹	56.73 ²⁹⁹	48.744 ²¹⁶	32.97 ¹¹⁹
19.0	60.742 ¹⁴⁷	79.82 ³³¹	19.831 ¹⁵⁴	59.75 ³⁰²	48.922 ¹⁷⁸	31.94 ¹⁰³
29.0	60.833 ⁹¹	83.12 ³³⁰	19.936 ¹⁰⁵	62.73 ²⁹⁸	49.057 ¹³⁵	31.12 ⁸²
Aug. 8.0	60.866 ³³	86.33 ³²¹	19.991 ⁵⁵	65.59 ²⁸⁶	49.148 ⁹¹	30.43 ⁶⁹
18.0	60.842 ²⁴	89.37 ³⁰⁴	19.996 ⁵	68.28 ²⁶⁹	49.193 ⁴⁵	29.95 ⁴⁸
27.9	60.763 ⁷⁹	92.20 ²⁸³	19.953 ⁴³	70.75 ²⁴⁷	49.193 [—]	29.66 ²⁹
Sept. 6.9	60.634 ¹²⁹	94.74 ²⁵⁴	19.865 ⁸⁸	72.94 ²¹⁹	49.152 ⁴¹	29.54 ¹²
16.9	60.461 ¹⁷³	96.96 ²²²	19.737 ¹²⁸	74.83 ¹⁸⁹	49.074 ⁷⁸	29.58 ⁴
26.8	60.251 ²¹⁰	98.79 ¹⁸³	19.577 ¹⁶⁰	76.36 ¹⁵³	48.966 ¹⁰⁸	29.74 ¹⁶
Oct. 6.8	60.012 ²³⁹	100.20 ¹⁴¹	19.391 ¹⁸⁶	77.51 ¹¹⁵	48.835 ¹³¹	30.01 ²⁷
16.8	59.755 ²⁵⁷	101.16 ⁹⁶	19.190 ²⁰¹	78.26 ⁷⁵	48.690 ¹⁴⁵	30.37 ³⁶
26.8	59.489 ²⁶⁶	101.65 ⁴⁹	18.981 ²⁰⁹	78.59 ³³	48.540 ¹⁵⁰	30.80 ⁴³
Nov. 5.7	59.224 ²⁶⁵	101.65 [—]	18.774 ²⁰⁷	78.48 ¹¹	48.394 ¹⁴⁶	31.27 ⁴⁷
15.7	58.970 ²⁵⁴	101.13 ⁵²	18.578 ¹⁹⁶	77.93 ⁵⁵	48.261 ¹³³	31.78 ⁵¹
25.7	58.736 ²³⁴	100.10 ¹⁰³	18.400 ¹⁷⁸	76.95 ⁹⁸	48.147 ¹¹⁴	32.32 ⁵⁴
Dec. 5.7	58.530 ²⁰⁶	98.60 ¹⁵⁰	18.246 ¹⁵⁴	75.57 ¹³⁸	48.058 ⁸⁹	32.87 ⁵⁵
15.6	58.358 ¹⁷²	96.66 ¹⁹⁴	18.123 ¹²³	73.80 ¹⁷⁷	47.999 ⁵⁹	33.43 ⁵⁶
25.6	58.227 ¹³¹	94.32 ²³⁴	18.034 ⁸⁹	71.70 ²¹⁰	47.972 ²⁷	33.97 ⁵⁴
35.6	58.140 ⁸⁷	91.66 ²⁶⁶	17.984 ⁵⁰	69.35 ²³⁵	47.978 ⁶	34.49 ⁵²
Mean Place	58.539	80.42	17.761	58.99	46.772	37.25
Sec δ , Tan δ	1.415	+1.001	1.202	+0.667	1.015	-0.172
L α , L δ	-0.02	+0.3	-0.01	+0.3	0.00	+0.3
ω α , ω δ	-0.04	-0.8	-0.03	-0.8	+0.01	-0.8
Authority and Catalogue No.	A. E.	1281	A. E.	1284	A. E.	1287

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	μ Aquarii.		ζ Vulpeculae.		γ Microscopii.	
	4.80	A 3	5.24	K 5	4.71	G 5
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 20 48	[°] ['] 9 15	^h ^m 20 51	[°] ['] 27 46	^h ^m 20 56	[°] ['] 32 32
Jan. 1.6	44.099 ^s	24.63 ["]	27.224 ^s	57.19 ["]	50.289 ^s	38.03 ["]
" 11.6	44.118 ¹⁹	25.17 ⁵⁴	27.199 ²⁵	54.92 ²²⁷	50.303 ¹⁴	37.24 ⁷⁹
21.5	44.172 ⁵⁴	25.65 ⁴⁸	27.212 ¹³	52.55 ²³⁷	50.358 ⁵⁵	36.29 ⁹⁵
31.5	44.257 ⁸⁵	26.03 ³⁸	27.263 ⁵¹	50.16 ²³⁹	50.451 ⁹³	35.20 ¹⁰⁹
Feb. 10.5	44.374 ¹¹⁷	26.30 ²⁷	27.352 ⁸⁹	47.84 ²³²	50.581 ¹³⁰	34.00 ¹²⁰
20.5	44.521 ¹⁴⁷	26.41 ¹¹	27.479 ¹²⁷	45.70 ²¹⁴	50.747 ¹⁶⁶	32.68 ¹³²
Mar. 1.4	44.697 ¹⁷⁶	26.33 ⁸	27.642 ¹⁶³	43.82 ¹⁸⁸	50.947 ²⁰⁰	31.28 ¹⁴⁰
11.4	44.901 ²⁰⁴	26.07 ²⁶	27.839 ¹⁹⁷	42.29 ¹⁵³	51.178 ²³¹	29.81 ¹⁴⁷
21.4	45.131 ²³⁰	25.58 ⁴⁹	28.069 ²³⁰	41.18 ¹¹¹	51.440 ²⁶²	28.28 ¹⁵³
31.3	45.384 ²⁵³	24.87 ⁷¹	28.328 ²⁵⁹	40.53 ⁶⁵	51.730 ²⁹⁰	26.72 ¹⁵⁶
Apr. 10.3	45.659 ²⁷⁵	23.95 ⁹²	28.612 ²⁸⁴	40.37 ¹⁶	52.044 ³¹⁴	25.16 ¹⁵⁶
20.3	45.952 ²⁹³	22.83 ¹¹²	28.915 ³⁰³	40.71 ³⁴	52.380 ³³⁶	23.64 ¹⁵²
30.3	46.258 ³⁰⁶	21.55 ¹²⁸	29.232 ³¹⁷	41.54 ⁸³	52.732 ³⁵²	22.19 ¹⁴⁵
May 10.2	46.572 ³¹⁴	20.14 ¹⁴¹	29.555 ³²³	42.82 ¹²⁸	53.094 ³⁶²	20.84 ¹³⁵
20.2	46.887 ³¹⁵	18.65 ¹⁴⁹	29.878 ³²³	44.52 ¹⁷⁰	53.459 ³⁶⁵	19.64 ¹²⁰
30.2	47.198 ³¹¹	17.13 ¹⁵²	30.192 ³¹⁴	46.58 ²⁰⁶	53.821 ³⁶²	18.62 ¹⁰²
June 9.2	47.496 ²⁹⁸	15.62 ¹⁵¹	30.489 ²⁹⁷	48.93 ²³⁵	54.170 ³⁴⁰	17.81 ⁸¹
19.1	47.774 ²⁷⁸	14.16 ¹⁴⁶	30.763 ²⁷⁴	51.51 ²⁵⁸	54.499 ³²⁹	17.24 ⁵⁷
29.1	48.027 ²⁵³	12.80 ¹³⁶	31.005 ²⁴²	54.24 ²⁷³	54.799 ³⁰⁰	16.91 ³³
July 9.1	48.246 ²¹⁹	11.56 ¹²⁴	31.210 ²⁰⁵	57.04 ²⁸⁰	55.063 ²⁶⁴	16.84 ⁷
19.0	48.428 ¹⁸²	10.49 ¹⁰⁷	31.373 ¹⁶³	59.86 ²⁸²	55.284 ²²¹	17.03 ¹⁹
29.0	48.567 ¹³⁹	09.59 ⁹⁰	31.491 ¹¹⁸	62.62 ²⁷⁶	55.457 ¹⁷³	17.45 ⁴²
Aug. 8.0	48.662 ⁹⁵	08.89 ⁷⁰	31.560 ⁶⁹	65.27 ²⁶⁵	55.580 ¹²³	18.09 ⁶⁴
18.0	48.711 ⁴⁹	08.38 ⁵¹	31.582 ²²	67.74 ²⁴⁷	55.649 ⁶⁹	18.92 ⁸³
27.9	48.716 ⁵	08.05 ³³	31.557 ²⁵	69.99 ²²⁵	55.666 ¹⁷	19.89 ⁹⁷
Sept. 6.9	48.679 ³⁷	07.90 ¹⁵	31.489 ⁶⁸	71.99 ²⁰⁰	55.633 ³³	20.94 ¹⁰⁵
16.9	48.605 ⁷⁴	07.91 ¹	31.382 ¹⁰⁷	73.69 ¹⁷⁰	55.554 ⁷⁹	22.05 ¹¹¹
26.9	48.500 ¹⁰⁵	08.05 ¹⁴	31.243 ¹³⁹	75.06 ¹³⁷	55.438 ¹¹⁶	23.13 ¹⁰⁸
Oct. 6.8	48.372 ¹²⁸	08.30 ²⁵	31.080 ¹⁶³	76.08 ¹⁰²	55.292 ¹⁴⁶	24.15 ¹⁰²
16.8	48.229 ¹⁴³	08.65 ³⁵	30.900 ¹⁸⁰	76.73 ⁶⁵	55.127 ¹⁶⁵	25.04 ⁸⁹
26.8	48.081 ¹⁴⁸	09.08 ⁴³	30.713 ¹⁸⁷	77.00 ²⁷	54.952 ¹⁷⁵	25.79 ⁷⁵
Nov. 5.7	47.936 ¹⁴⁵	09.56 ⁴⁸	30.525 ¹⁸⁸	76.88 ¹²	54.779 ¹⁷³	26.34 ⁵⁵
15.7	47.803 ¹³³	10.08 ⁵²	30.348 ¹⁷⁷	76.37 ⁵¹	54.616 ¹⁶³	26.68 ³⁴
25.7	47.687 ¹¹⁶	10.62 ⁵⁴	30.187 ¹⁶¹	75.46 ⁹¹	54.474 ¹⁴²	26.80 ¹²
Dec. 5.7	47.597 ⁹⁰	11.18 ⁵⁶	30.048 ¹³⁹	74.19 ¹²⁷	54.359 ¹¹⁵	26.70 ¹⁰
15.6	47.535 ⁶²	11.76 ⁵⁸	29.938 ¹¹⁰	72.58 ¹⁶¹	54.277 ⁸²	26.38 ³²
25.6	47.503 ³²	12.33 ⁵⁷	29.859 ⁷⁹	70.68 ¹⁹⁰	54.231 ⁴⁶	25.86 ⁵²
35.6	47.506 ³	12.88 ⁵⁵	29.815 ⁴⁴	68.55 ²¹³	54.225 ⁶	25.15 ⁷¹
Mean Place	46.292	15.96	29.371	58.69	52.759	24.91
Sec δ , Tan δ	1.013	-0.163	1.130	+0.527	1.186	-0.638
L a , L δ	0.00	+0.3	-0.01	+0.3	+0.01	+0.3
ω a , ω δ	+0.01	-0.7	-0.02	-0.7	+0.03	-0.7
Authority and Catalogue No.	1293		A. E. 1296		1301	

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	θ Capricorni.		61 Cygni.		ζ Cygni.	
	4.19	A 0	5.57	K 5	3.40	K 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 21 01	^m 17 31	^h 21 03	^m 38 23	^h 21 09	^m 29 55
Jan. 1.6	51.902 ¹¹	22.28 ⁶	37.833 ⁴⁹	40.70 ²⁴²	50.086 ⁴⁶	50.38 ²²³
11.6	51.913 ⁴⁴	22.34 ⁴	37.784 ⁸	38.28 ²⁶⁰	50.040 ⁹	48.15 ²³⁶
21.5	51.957 ⁷⁸	22.30 ¹⁶	37.776 ³⁶	35.68 ²⁶⁶	50.031 ²⁸	45.79 ²⁴²
31.5	52.035 ¹¹⁰	22.14 ²⁹	37.812 ⁸⁰	33.02 ²⁶³	50.059 ⁶⁷	43.37 ²³⁷
Feb. 10.5	52.145 ¹⁴¹	21.85 ⁴⁴	37.892 ¹²⁴	30.39 ²⁴⁸	50.126 ¹⁰⁶	41.00 ²²³
20.5	52.286 ¹⁷²	21.41 ⁵⁹	38.016 ¹⁶⁸	27.91 ²²²	50.232 ¹⁴⁴	38.77 ¹⁹⁸
Mar. 1.4	52.458 ²⁰¹	20.82 ⁷⁴	38.184 ²⁰⁹	25.69 ¹⁸⁷	50.376 ¹⁸¹	36.79 ¹⁶⁶
11.4	52.659 ²²⁸	20.08 ⁹¹	38.393 ²⁴⁸	23.82 ¹⁴⁴	50.557 ²¹⁶	35.13 ¹²⁷
21.4	52.887 ²⁵⁵	19.17 ¹⁰⁷	38.641 ²⁸⁴	22.38 ⁹⁴	50.773 ²⁴⁹	33.86 ⁸¹
31.4	53.142 ²⁷⁸	18.10 ¹²¹	38.925 ³¹³	21.44 ⁴¹	51.022 ²⁷⁷	33.05 ³²
Apr. 10.3	53.420 ²⁹⁹	16.89 ¹³²	39.238 ³³⁶	21.03 ¹⁴	51.299 ³⁰¹	32.73 ¹⁹
20.3	53.719 ³¹⁴	15.57 ¹⁴⁰	39.574 ³⁵²	21.17 ⁶⁹	51.600 ³¹⁸	32.92 ⁶⁸
30.3	54.033 ³²³	14.17 ¹⁴⁵	39.926 ³⁶⁰	21.86 ¹²²	51.918 ³²⁸	33.60 ¹¹⁶
May 10.2	54.356 ³²⁸	12.72 ¹⁴⁶	40.286 ³⁵⁹	23.08 ¹⁷¹	52.246 ³³⁰	34.76 ¹⁶⁰
20.2	54.684 ³²⁶	11.26 ¹⁴²	40.645 ³⁴⁹	24.79 ²¹⁵	52.576 ³²⁵	36.36 ¹⁹⁸
30.2	55.010 ³¹⁵	09.84 ¹³³	40.994 ³³¹	26.94 ²⁵¹	52.901 ³¹⁰	38.34 ²³⁰
June 9.2	55.325 ²⁹⁷	08.51 ¹²⁰	41.325 ³⁰⁴	29.45 ²⁸¹	53.211 ²⁸⁹	40.64 ²⁵⁶
19.1	55.622 ²⁷²	07.31 ¹⁰⁵	41.629 ²⁷⁰	32.26 ³⁰³	53.500 ²⁵⁹	43.20 ²⁷⁴
29.1	55.894 ²⁴⁰	06.26 ⁸⁷	41.899 ²²⁸	35.29 ³¹⁸	53.759 ²²³	45.94 ²⁸⁵
July 9.1	56.134 ²⁰²	05.39 ⁶⁶	42.127 ¹⁸²	38.47 ³²⁴	53.982 ¹⁸²	48.79 ²⁹⁰
19.1	56.336 ¹⁵⁹	04.73 ⁴⁶	42.309 ¹³²	41.71 ³²³	54.164 ¹³⁶	51.69 ²⁸⁶
29.0	56.495 ¹¹⁴	04.27 ²⁶	42.441 ⁸⁰	44.94 ³¹⁶	54.300 ⁸⁹	54.55 ²⁷⁷
Aug. 8.0	56.609 ⁶⁷	04.01 ⁴	42.521 ²⁷	48.10 ³⁰¹	54.389 ³⁸	57.32 ²⁶⁴
18.0	56.676 ²⁰	03.97 ¹³	42.548 ²⁴	51.11 ²⁸⁰	54.427 ⁸	59.96 ²⁴²
27.9	56.696 ²⁵	04.10 ²⁸	42.524 ⁷²	53.91 ²⁵⁵	54.419 ⁵³	62.38 ²¹⁸
Sept. 6.9	56.671 ⁶⁴	04.38 ⁴¹	42.452 ¹¹⁵	56.46 ²²⁵	54.366 ⁹³	64.56 ¹⁸⁹
16.9	56.607 ⁹⁷	04.79 ⁵⁰	42.337 ¹⁵⁰	58.71 ¹⁸⁹	54.273 ¹²⁸	66.45 ¹⁵⁸
26.9	56.510 ¹²⁴	05.29 ⁵⁶	42.187 ¹⁷⁹	60.60 ¹⁵¹	54.145 ¹⁵⁵	68.03 ¹²²
Oct. 6.8	56.386 ¹⁴¹	05.85 ⁵⁸	42.008 ¹⁹⁹	62.11 ¹¹⁰	53.990 ¹⁷⁴	69.25 ⁸⁶
16.8	56.245 ¹⁴⁹	06.43 ⁵⁸	41.809 ²¹¹	63.21 ⁶⁶	53.816 ¹⁸⁵	70.11 ⁴⁶
26.8	56.096 ¹⁴⁸	07.01 ⁵⁵	41.598 ²¹²	63.87 ²¹	53.631 ¹⁸⁸	70.57 ⁷
Nov. 5.8	55.948 ¹³⁹	07.56 ⁴⁹	41.386 ²⁰⁶	64.08 ²⁵	53.443 ¹⁸²	70.64 ³⁴
15.7	55.809 ¹²²	08.05 ⁴⁴	41.180 ¹⁹¹	63.83 ⁷²	53.261 ¹⁷⁰	70.30 ⁷⁴
25.7	55.687 ⁹⁹	08.49 ³⁵	40.989 ¹⁷⁰	63.11 ¹¹⁶	53.091 ¹⁵¹	69.56 ¹¹³
Dec. 5.7	55.588 ⁷¹	08.84 ²⁸	40.819 ¹⁴¹	61.95 ¹⁵⁸	52.940 ¹²⁶	68.43 ¹⁴⁹
15.6	55.517 ⁴⁰	09.12 ¹⁹	40.678 ¹⁰⁹	60.37 ¹⁹⁵	52.814 ⁹⁷	66.94 ¹⁸²
25.6	55.477 ⁶	09.31 ¹⁰	40.569 ⁷¹	58.42 ²²⁶	52.717 ⁶⁴	65.12 ²⁰⁷
35.6	55.471	09.41	40.498	56.16	52.653	63.05
Mean Place	54.121	11.60	40.055	40.17	52.191	51.10
Sec δ, Tan δ	1.049	-0.315	1.276	+0.792	1.154	+0.576
L α, L δ	+0.01	+0.3	-0.01	+0.3	-0.01	+0.3
ω α, ω δ	+0.02	-0.7	-0.04	-0.7	-0.03	-0.7
Authority and Catalogue No.	1305		A. E. 1308		A. E. 1314	

No. 1308. Corrected for a parallax of 0".30.

APPARENT PLACES OF STARS, 1928.

413

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Equulei.		θ^1 Microscopii.		α Cephei.	
	4.14	F 8-A 3	4.92	A 2 p	2.60	A 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 21 12	^m 4 56	^h 21 16	^m 41 06	^h 21 16	^m 62 16
Jan. 1.6	11.432 ⁹	51.46 ¹²²	07.151 ¹³	69.20 ¹²³	48.81 ²²	53.44 ²⁷¹
11.6	11.423 ²¹	50.24 ¹²²	07.138 ³⁰	67.97 ¹⁴⁴	48.59 ¹⁶	50.73 ³⁰⁰
21.6	11.444 ⁵²	49.02 ¹¹⁷	07.168 ⁷⁴	66.53 ¹⁶²	48.43 ⁸	47.73 ³²¹
31.5	11.496 ⁸⁴	47.85 ¹⁰⁷	07.242 ¹¹⁵	64.91 ¹⁷⁶	48.35 ¹	44.52 ³²⁸
Feb. 10.5	11.580 ¹¹⁴	46.78 ⁹⁰	07.357 ¹⁵⁵	63.15 ¹⁸⁷	48.36 ⁸	41.24 ³²³
20.5	11.694 ¹⁴⁵	45.88 ⁶⁹	07.512 ¹⁹⁵	61.28 ¹⁹⁶	48.44 ¹⁷	38.01 ³⁰⁵
Mar. 1.4	11.839 ¹⁷⁵	45.19 ⁴³	07.707 ²³³	59.32 ¹⁹⁹	48.61 ²⁵	34.96 ²⁷⁴
11.4	12.014 ²⁰⁴	44.76 ¹³	07.940 ²⁶⁸	57.33 ²⁰¹	48.86 ³²	32.22 ²³⁴
21.4	12.218 ²³²	44.63 ¹⁸	08.208 ³⁰²	55.32 ¹⁹⁸	49.18 ³⁹	29.88 ¹⁸³
31.4	12.450 ²⁵⁶	44.81 ⁵²	08.510 ³³²	53.34 ¹⁹²	49.57 ⁴⁴	28.05 ¹²⁷
Apr. 10.3	12.706 ²⁷⁷	45.33 ⁸⁴	08.842 ³⁵⁹	51.42 ¹⁸¹	50.01 ⁴⁸	26.78 ⁶⁷
20.3	12.983 ²⁹³	46.17 ¹¹⁵	09.201 ³⁷⁹	49.61 ¹⁶⁶	50.49 ⁵¹	26.11 ⁵⁸
30.3	13.276 ³⁰⁵	47.32 ¹⁴¹	09.580 ⁴⁰²	47.95 ¹²⁶	51.00 ⁵²	26.06 ¹¹⁷
May 10.3	13.581 ³¹⁰	48.73 ¹⁶⁴	09.973 ⁴⁰⁰	46.47 ¹⁰⁰	51.52 ⁵⁰	26.64 ¹⁷³
20.2	13.891 ²⁹⁸	50.37 ¹⁹³	10.375 ³⁹⁰	45.21 ⁴¹	52.04 ⁴²	27.81 ²²²
30.2	14.198 ²⁸¹	52.19 ²⁰⁰	10.775 ³⁴³	44.21 ¹⁰	52.54 ³⁷	29.54 ³⁰¹
June 9.2	14.496 ²²⁷	54.12 ¹⁹⁶	11.165 ³⁰⁶	43.50 ²³	53.01 ³⁰	31.76 ³²⁹
19.1	14.777 ¹⁹⁰	56.12 ¹⁸⁸	11.537 ²⁶²	43.09 ⁵³	53.43 ²³	34.42 ³⁴⁸
29.1	15.034 ¹⁵¹	58.13 ¹⁷⁴	11.880 ²¹¹	42.99 ⁸¹	53.80 ¹⁵	37.43 ³⁵⁹
July 9.1	15.261 ¹⁰⁷	60.09 ¹⁵⁸	12.186 ¹⁵⁵	43.22 ¹⁰⁶	54.10 ⁷	40.72 ³⁶²
19.1	15.451 ⁶³	61.97 ¹³⁸	12.448 ⁹⁸	43.75 ¹²⁷	54.33 ²	44.20 ³⁵⁷
29.0	15.602 ¹¹⁹	63.71 ¹¹⁸	12.659 ³⁸	44.56 ¹⁴²	54.48 ⁹	47.79 ³⁴⁵
Aug. 8.0	15.709 ²³	65.29 ⁹⁵	12.814 ¹⁸	45.62 ¹⁵⁰	54.55 ¹⁷	51.41 ³²⁴
18.0	15.772 ⁶⁰	66.67 ⁷³	12.912 ⁷⁰	46.89 ¹⁵³	54.53 ²³	54.98 ²⁹⁷
28.0	15.791 ⁹²	67.85 ⁵¹	12.950 ¹¹⁵	48.31 ¹⁴⁹	54.44 ²⁹	58.43 ²⁶⁴
Sept. 6.9	15.768 ¹¹⁷	68.80 ²⁸	12.932 ¹⁵²	49.81 ¹³⁷	54.27 ³⁵	61.67 ²²⁶
16.9	15.708 ¹³⁴	69.53 ⁷	12.862 ¹⁷⁹	51.34 ¹¹⁹	54.04 ³⁹	64.64 ¹⁸²
26.9	15.616 ¹⁴³	70.04 ¹⁴	12.747 ¹⁹⁴	52.83 ⁹⁷	53.75 ⁴²	67.28 ¹³²
Oct. 6.8	15.499 ¹⁴⁴	70.32 ³³	12.595 ¹⁹⁸	54.20 ⁶⁹	53.40 ⁴³	69.54 ⁷⁹
16.8	15.365 ¹³⁸	70.39 ⁵¹	12.416 ¹⁹¹	55.39 ⁴⁰	53.01 ⁴³	71.36 ²³
26.8	15.222 ¹²⁴	70.25 ⁶⁹	12.222 ¹⁷⁴	56.36 ⁸	52.59 ⁴³	72.68 ³⁵
Nov. 5.8	15.078 ¹⁰⁵	69.92 ⁸⁵	12.024 ¹⁴⁷	57.05 ²⁴	52.16 ⁴⁰	73.47 ⁹¹
15.7	14.940 ⁸²	69.41 ⁹⁸	11.833 ¹¹⁶	57.45 ⁸⁴	51.73 ²⁶	73.70 ¹⁴⁷
25.7	14.816 ⁵⁵	68.72 ¹⁰⁹	11.659 ⁷⁷	57.53 ³⁶	51.30 ³²	73.35 ¹⁹⁹
Dec. 5.7	14.711 ²⁵	67.87 ¹¹⁷	11.512 ³⁶	57.29 ¹¹⁰	50.90 ²⁶	72.44 ²⁴⁴
15.7	14.629	66.89	11.396	56.75	50.53	70.97
25.6	14.574	65.80	11.319	55.91	50.21	68.98
35.6	14.549	64.63	11.283	54.81	49.95	66.54
Mean Place	13.475	57.60	09.713	53.64	51.661	48.37
Sec δ , Tan δ	1.004	+0.087	1.327	-0.873	2.150	+1.903
L α , L δ	0.00	+0.3	+0.02	+0.3	-0.03	+0.3
ω , α , ω δ	0.00	-0.7	+0.04	-0.7	-0.10	-0.7
Authority and Catalogue No.	A. E.	1318	A. N.	1323	A. E.	1324

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect	α Capricorni.		γ Pavonis.		ζ Capricorni.	
	4·30	K 0	4·30	F 8	3·86	G 5 p
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 21 ^m 18	^h 17 ^m 08	^h 21 ^m 20	^h 65 ^m 41	^h 21 ^m 22	^h 22 ^m 43
Jan. 1·6	^s 12·254	^s 42·67	^s 26·90	^s 54·70	^s 31·386	^s 39·01
11·6	12·250 ²⁹	42·74 ⁷	26·80 ¹⁰	52·27 ²⁴³	31·379 ⁷	38·78 ²³
21·6	12·279 ⁶⁰	42·69 ⁵	26·79 ¹	49·57 ²⁷⁰	31·404 ²⁵	38·40 ³⁸
31·5	12·339 ¹⁷	42·52 ¹⁷	26·86 ⁷	46·68 ²⁸⁹	31·462 ⁵⁸	37·88 ⁵²
Feb. 10·5	12·431 ⁹²	42·21 ³¹	27·01 ¹⁵	43·66 ³⁰²	31·554 ⁹²	37·21 ⁶⁷
20·5	12·554 ¹²³	41·75 ⁴⁶	27·24 ²³	40·59 ³⁰⁷	31·678 ¹²⁴	36·39 ⁸²
Mar 1·4	12·709 ¹⁵⁵	41·13 ⁶²	27·55 ³¹	37·53 ³⁰⁶	31·834 ¹⁵⁶	35·41 ⁹⁸
11·4	12·893 ¹⁸⁴	40·33 ⁸⁰	27·93 ³⁸	34·56 ²⁹⁷	32·021 ¹⁸⁷	34·30 ¹¹¹
21·4	13·107 ²¹⁴	39·36 ⁹⁷	28·38 ⁴⁵	31·74 ²⁸²	32·239 ²¹⁸	33·05 ¹²⁵
31·4	13·349 ²⁴²	38·23 ¹¹³	28·88 ⁵⁰	29·11 ²⁶³	32·486 ²⁴⁷	31·67 ¹³⁸
Apr. 10·3	13·617 ²⁶⁸	36·94 ¹²⁹	29·44 ⁵⁶	26·74 ²³⁷	32·759 ²⁷³	30·20 ¹⁴⁷
20·3	13·907 ²⁹⁰	35·54 ¹⁴⁰	30·04 ⁶⁰	24·67 ²⁰⁷	33·056 ²⁹⁷	28·65 ¹⁵⁵
30·3	14·215 ³⁰⁸	34·06 ¹⁴⁸	30·68 ⁶⁴	22·95 ¹⁷²	33·373 ³¹⁷	27·07 ¹⁵⁸
May 10·3	14·536 ³²¹	32·51 ¹⁵⁵	31·34 ⁶⁶	21·61 ¹³⁴	33·703 ³³⁰	25·49 ¹⁵⁸
20·2	14·866 ³³⁰	30·96 ¹⁵⁵	32·00 ⁶⁶	20·68 ⁹³	34·041 ³³⁸	23·96 ¹⁵³
30·2	15·192 ¹²⁶	29·45 ¹⁵¹	32·67 ⁶⁷	20·19 ⁴⁹	34·380 ³³⁹	22·51 ¹⁴⁵
June 9·2	15·512 ³²⁰	28·01 ¹⁴⁴	33·31 ⁶⁴	20·15 ⁴	34·711 ³³¹	21·20 ¹³¹
19·1	15·816 ³⁰⁴	26·70 ¹³¹	33·92 ⁶¹	20·56 ⁴¹	35·028 ³¹⁷	20·06 ¹¹⁴
29·1	16·098 ²⁸²	25·55 ¹¹⁵	34·49 ⁵⁷	21·39 ⁸³	35·322 ²⁹⁴	19·11 ⁹⁵
July 9·1	16·349 ²⁵¹	24·58 ⁹⁷	34·99 ⁵⁰	22·64 ¹²⁵	35·586 ²⁶⁴	18·39 ⁷²
19·1	16·564 ²¹⁵	23·82 ⁷⁶	35·41 ⁴²	24·27 ¹⁶³	35·812 ²²⁶	17·91 ⁴⁸
29·0	16·738 ¹⁷⁴	23·27 ⁵⁵	35·75 ³⁴	26·21 ¹⁹⁴	35·997 ¹⁸⁵	17·66 ²⁵
Aug 8·0	16·867 ¹²⁹	22·95 ³²	36·00 ²⁵	28·40 ²¹⁹	36·136 ¹³⁹	17·66 ²⁰
18·0	16·949 ⁸²	22·85 ¹⁰	36·14 ¹⁴	30·77 ²³⁷	36·226 ⁹⁰	17·86 ²⁰
28·0	16·984 ³⁵	22·93 ⁸	36·18 ⁴	33·24 ²⁴⁷	36·268 ⁴²	18·27 ⁴¹
Sept 6·9	16·976 ⁸	23·19 ²⁶	36·12 ⁶	35·71 ²⁴⁷	36·263 ⁵	18·84 ⁵⁷
16·9	16·926 ⁵⁰	23·59 ⁴⁰	35·96 ¹⁶	38·09 ²³⁸	36·216 ⁴⁷	19·53 ⁶⁹
26·9	16·841 ⁸⁵	24·10 ⁵¹	35·71 ²⁵	40·28 ²¹⁹	36·131 ⁸⁵	20·30 ⁷⁷
Oct. 6·8	16·728 ¹¹³	24·68 ⁵⁸	35·40 ³¹	42·19 ¹⁹¹	36·017 ¹¹⁴	21·10 ⁸⁰
16·8	16·596 ¹³²	25·30 ⁶²	35·03 ³⁷	43·73 ¹⁵⁴	35·881 ¹³⁶	21·89 ⁷⁹
26·8	16·453 ¹⁴³	25·92 ⁶²	34·63 ⁴⁰	44·85 ¹¹²	35·733 ¹⁴⁸	22·63 ⁷⁴
Nov. 5·8	16·308 ¹⁴⁵	26·50 ⁵⁸	34·21 ⁴²	45·48 ⁶³	35·582 ¹⁵¹	23·29 ⁶⁶
15·7	16·169 ¹³⁹	27·04 ⁵⁴	33·79 ⁴²	45·60 ¹²	35·436 ¹⁴⁶	23·84 ⁵⁵
25·7	16·044 ¹²⁵	27·52 ⁴⁸	33·40 ³⁹	45·19 ⁴¹	35·305 ¹³¹	24·26 ⁴²
Dec. 5·7	15·939 ¹⁰⁵	27·92 ⁴⁰	33·05 ³⁵	44·26 ⁹³	35·193 ¹¹²	24·54 ²⁸
15·7	15·859 ⁸⁰	28·24 ³²	32·76 ²⁹	42·85 ¹⁴¹	35·107 ⁸⁶	24·67 ¹³
25·6	15·807 ⁵²	28·46 ²²	32·54 ²²	40·99 ¹⁸⁶	35·050 ⁵⁷	24·66 ¹
35·6	15·787 ²⁰	28·57 ¹¹	32·39 ¹⁵	38·75 ²²⁴	35·025 ²⁵	24·50 ¹⁶
Mean Place	14·398	31·49	30·838	35·96	33·572	26·50
Sec δ, Tan δ	1·046	-0·308	2·429	-2·214	1·084	-0·419
L α, L δ	+0·01	+0·3	+0·04	+0·3	+0·01	+0·3
ω α, ω δ	+0·02	-0·7	+0·11	-0·6	+0·02	-0·6
Authority and Catalogue No.	1325		A. E. 1327		A. E. 1328	

APPARENT PLACES OF STARS, 1928.

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AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Cephei.		β Aquarii.		ξ Aquarii.	
	3.33	B 1	3.07	G 0	4.78	A 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ₂₁ ^m ₂₇	[°] ₇₀ ['] ₁₄	^h ₂₁ ^m ₂₇	[°] ₅ ['] ₅₃	^h ₂₁ ^m ₃₃	[°] ₈ ['] ₁₀
Jan. 1.6	^s _{40.81}	["] _{46.91}	^s _{44.149}	["] _{28.17}	^s _{53.193}	["] _{49.93}
11.6	₃₈ 40.43	₂₅₈ 44.33	₁₅ 44.134	₆₄ 28.81	₁₈ 53.175	₅₃ 50.46
21.6	₂₈ 40.15	₂₉₃ 41.40	₁₅ 44.149	₅₉ 29.40	₁₀ 53.185	₄₅ 50.91
31.5	₁₈ 39.97	₃₁₉ 38.21	₄₄ 44.193	₄₉ 29.89	₄₀ 53.225	₃₅ 51.26
Feb. 10.5	₇ 39.90	₃₃₁ 34.90	₇₅ 44.268	₃₇ 30.26	₇₀ 53.205	₂₁ 51.47
20.5	₅ 39.95	₃₃₁ 31.59	₁₀₆ 44.374	₂₁ 30.47	₁₀₀ 53.395	₆ 51.53
Mar. 1.5	₁₇ 40.12	₃₁₉ 28.40	₁₃₆ 44.510	₂ 30.49	₁₃₁ 53.526	₁₄ 51.39
11.4	₂₉ 40.41	₂₉₂ 25.48	₁₆₅ 44.675	₂₀ 30.29	₁₆₁ 53.687	₃₄ 51.05
21.4	₃₉ 40.80	₂₅₆ 22.92	₁₉₆ 44.871	₄₃ 29.86	₁₉₂ 53.879	₅₇ 50.48
31.4	₄₈ 41.28	₂₀₉ 20.83	₂₂₄ 45.095	₆₈ 29.18	₂₂₂ 54.101	₈₀ 49.68
Apr. 10.3	₅₆ 41.84	₁₅₄ 19.29	₂₅₀ 45.345	₉₃ 28.25	₂₄₇ 54.348	₁₀₃ 48.65
20.3	₆₂ 42.46	₉₅ 18.34	₂₇₃ 45.618	₁₁₅ 27.10	₂₇₃ 54.621	₁₂₄ 47.41
30.3	₆₆ 43.12	₃₃ 18.01	₂₉₃ 45.911	₁₃₆ 25.74	₂₉₂ 54.913	₁₄₁ 46.00
May 10.3	₆₈ 43.80	₂₉ 18.30	₃₀₆ 46.217	₁₅₂ 24.22	₃₀₈ 55.221	₁₅₆ 44.44
20.2	₆₈ 44.48	₉₁ 19.21	₃₁₅ 46.532	₁₆₄ 22.58	₃₁₆ 55.537	₁₆₆ 42.78
30.2	₆₆ 45.14	₁₄₉ 20.70	₃₁₅ 46.847	₁₇₂ 20.86	₃₁₈ 55.855	₁₇₁ 41.07
June 9.2	₆₁ 45.75	₂₀₁ 22.71	₃₀₉ 47.156	₁₇₅ 19.11	₃₁₄ 56.169	₁₇₂ 39.35
19.2	₅₆ 46.31	₂₄₉ 25.20	₂₉₅ 47.451	₁₇₂ 17.39	₂₉₉ 56.468	₁₆₇ 37.68
29.1	₄₈ 46.79	₂₈₈ 28.08	₂₇₃ 47.724	₁₆₅ 15.74	₂₈₀ 56.748	₁₅₈ 36.10
July 9.1	₃₉ 47.18	₃₂₀ 31.28	₂₄₆ 47.970	₁₅₄ 14.20	₂₅₁ 56.999	₁₄₆ 34.64
19.1	₃₀ 47.48	₃₄₄ 34.72	₂₁₁ 48.181	₁₃₈ 12.82	₂₁₈ 57.217	₁₂₉ 33.35
29.0	₁₉ 47.67	₃₆₀ 38.32	₁₇₁ 48.352	₁₂₁ 11.61	₁₇₉ 57.396	₁₀₉ 32.26
Aug. 8.0	₉ 47.76	₃₆₈ 42.00	₁₂₉ 48.481	₁₀₀ 10.61	₁₃₆ 57.532	₈₉ 31.37
18.0	₂ 47.74	₃₆₇ 45.67	₈₅ 48.566	₈₀ 09.81	₉₂ 57.624	₆₈ 30.69
28.0	₁₃ 47.61	₃₅₉ 49.26	₄₀ 48.606	₅₉ 09.22	₄₇ 57.671	₄₆ 30.23
Sept. 6.9	₂₃ 47.38	₃₄₃ 52.69	₃ 48.603	₃₈ 08.84	₄ 57.675	₂₆ 29.97
16.9	₃₂ 47.06	₃₂₀ 55.89	₄₂ 48.561	₁₉ 08.65	₃₆ 57.639	₇ 29.90
26.9	₄₁ 46.65	₂₉₁ 58.80	₇₆ 48.485	₁ 08.64	₇₀ 57.569	₉ 29.99
Oct. 6.9	₄₈ 46.17	₂₅₄ 61.34	₁₀₃ 48.382	₁₄ 08.78	₉₉ 57.470	₂₄ 30.23
16.8	₅₄ 45.63	₂₁₁ 63.45	₁₂₂ 48.260	₂₈ 09.06	₁₁₈ 57.352	₃₆ 30.59
26.8	₅₉ 45.04	₁₆₃ 65.08	₁₃₅ 48.125	₃₈ 09.44	₁₃₂ 57.220	₄₄ 31.03
Nov. 5.8	₆₂ 44.42	₁₁₁ 66.19	₁₃₇ 47.988	₄₆ 09.90	₁₃₆ 57.084	₅₁ 31.54
15.7	₆₂ 43.80	₅₄ 66.73	₁₃₃ 47.855	₅₄ 10.44	₁₃₃ 56.951	₅₆ 32.10
25.7	₆₃ 43.17	₄ 66.69	₁₂₂ 47.733	₆₀ 11.04	₁₂₂ 56.829	₅₉ 32.69
Dec. 5.7	₆₀ 42.57	₆₄ 66.05	₁₀₅ 47.628	₆₄ 11.68	₁₀₅ 56.724	₆₀ 33.29
15.7	₅₆ 42.01	₁₂₃ 64.82	₈₃ 47.545	₆₆ 12.34	₈₅ 56.639	₆₀ 33.89
25.6	₅₁ 41.50	₁₇₈ 63.04	₅₇ 47.488	₆₆ 13.00	₆₁ 56.578	₅₇ 34.46
35.6	₄₄ 41.06	₂₂₈ 60.76	₃₀ 47.458	₆₅ 13.65	₃₄ 56.544	₅₃ 34.99
Mean Place	44.251	40.38	46.170	19.29	55.199	40.39
Sec δ , Tan δ	2.959	+2.784	1.005	-0.103	1.010	-0.144
L α , L δ	-0.05	+0.3	0.00	+0.3	0.00	+0.3
ω α , ω δ	-0.15	-0.6	+0.01	-0.6	+0.01	-0.6
Authority and Catalogue No.	A. E.	1333	A. E.	1332		1338

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect	ϵ Pegasi.		δ Capricorni.		γ Gruis.	
	2.54	Ko	2.98	A 5	3.16	B 8
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 21 ^m 40	[°] 9 ['] 32	^h 21 ^m 43	[°] 16 ['] 27	^h 21 ^m 49	[°] 37 ['] 42
Jan. 1.6	37.004 ^s	34.07 ["]	02.124 ^s	28.68 ["]	32.244 ^s	31.69 ["]
11.6	36.968 ³⁶	32.76 ¹³¹	02.099 ²⁵	28.79 ¹¹	32.199 ⁴⁵	30.73 ⁹⁶
21.6	36.959 ⁹	31.41 ¹³⁵	02.104 ⁵	28.77 ²	32.190 ⁹	29.53 ¹²⁰
31.5	36.980 ²¹	30.07 ¹³⁴	02.139 ³⁵	28.61 ¹⁶	32.219 ²⁹	28.10 ¹⁴³
Feb. 10.5	37.032 ⁵²	28.82 ¹²⁵	02.205 ⁶⁶	28.30 ³¹	32.287 ⁶⁸	26.48 ¹⁶²
20.5	37.115 ⁸³	27.71 ¹¹¹	02.302 ⁹⁷	27.82 ⁴⁸	32.393 ¹⁰⁶	24.69 ¹⁷⁹
Mar. 1.5	37.230 ¹¹⁵	26.80 ⁹¹	02.430 ¹²⁸	27.17 ⁶⁵	32.537 ¹⁴⁴	22.77 ¹⁹²
11.4	37.378 ¹⁴⁸	26.15 ⁶⁵	02.590 ¹⁶⁰	26.33 ⁸⁴	32.719 ¹⁸²	20.75 ²⁰²
21.4	37.558 ¹⁸⁰	25.80 ³⁵	02.781 ¹⁹¹	25.31 ¹⁰²	32.938 ²¹⁹	18.66 ²⁰⁹
31.4	37.768 ²¹⁰	25.78 ²	03.002 ²²¹	24.11 ¹²⁰	33.194 ²⁵⁶	16.54 ²¹²
Apr. 10.4	38.007 ²³⁹	26.12 ³⁴	03.252 ²⁵⁰	22.76 ¹³⁵	33.482 ²⁸⁸	14.43 ²¹¹
20.3	38.272 ²⁶⁵	26.81 ⁶⁹	03.528 ²⁷⁶	21.27 ¹⁴⁹	33.801 ³¹⁹	12.36 ²⁰⁷
30.3	38.558 ²⁸⁶	27.84 ¹⁰³	03.825 ²⁹⁷	19.67 ¹⁶⁰	34.147 ³⁴⁶	10.40 ¹⁹⁶
May 10.3	38.859 ³⁰¹	29.18 ¹³⁴	04.140 ³¹⁵	18.01 ¹⁶⁶	34.513 ³⁶⁶	08.57 ¹⁸³
20.2	39.170 ³¹¹	30.80 ¹⁶²	04.465 ³²⁵	16.33 ¹⁶⁸	34.894 ³⁸¹	06.94 ¹⁶³
30.2	39.483 ³¹³	32.65 ¹⁸⁵	04.795 ³³⁰	14.68 ¹⁶⁵	35.280 ³⁸⁶	05.52 ¹⁴²
June 9.2	39.790 ³⁰⁷	34.67 ²⁰²	05.121 ³²⁶	13.10 ¹⁵⁸	35.663 ³⁸³	04.37 ¹¹⁵
19.2	40.084 ²⁰⁴	36.80 ²¹³	05.435 ³¹⁴	11.63 ¹⁴⁷	36.034 ³⁷¹	03.52 ⁸⁵
29.1	40.357 ²⁷³	38.99 ²¹⁹	05.730 ²⁹⁵	10.33 ¹³⁰	36.385 ³⁵¹	02.99 ⁵³
July 9.1	40.603 ²⁴⁶	41.18 ²¹⁹	05.998 ²⁶⁸	09.21 ¹¹²	36.705 ³²⁰	02.78 ²¹
19.1	40.814 ²¹¹	43.32 ²¹⁴	06.232 ²³⁴	08.31 ⁹⁰	36.988 ²⁸³	02.91 ¹³
29.1	40.988 ¹⁷⁴	45.35 ²⁰³	06.428 ¹⁹⁶	07.64 ⁶⁷	37.225 ²³⁷	03.36 ⁴⁵
Aug. 8.0	41.119 ¹³¹	47.23 ¹⁸⁸	06.580 ¹⁵²	07.21 ⁴³	37.412 ¹⁸⁷	04.11 ⁷⁵
18.0	41.207 ⁸⁸	48.94 ¹⁷¹	06.687 ¹⁰⁷	07.00 ²¹	37.545 ¹³³	05.11 ¹⁰⁰
28.0	41.251 ⁴⁴	50.44 ¹⁵⁰	06.748 ⁶¹	07.02 ²	37.623 ⁷⁸	06.33 ¹²²
Sept. 6.9	41.252 ¹	51.72 ¹²⁸	06.763 ¹⁵	07.24 ²²	37.645 ²²	07.71 ¹³⁸
16.9	41.214 ³⁸	52.76 ¹⁰⁴	06.736 ²⁷	07.62 ³⁸	37.616 ²⁹	09.18 ¹⁴⁷
26.9	41.143 ⁷¹	53.55 ⁷⁹	06.672 ⁶⁴	08.14 ⁵²	37.541 ⁷⁵	10.68 ¹⁵⁰
Oct. 6.9	41.043 ¹⁰⁰	54.10 ⁵⁵	06.578 ⁹⁴	08.75 ⁶¹	37.426 ¹¹⁵	12.14 ¹⁴⁶
16.8	40.922 ¹²¹	54.41 ³¹	06.461 ¹¹⁷	09.42 ⁶⁷	37.280 ¹⁴⁶	13.48 ¹³⁴
26.8	40.789 ¹³³	54.48 ⁷	06.329 ¹³²	10.11 ⁶⁹	37.113 ¹⁶⁷	14.66 ¹¹⁸
Nov. 5.8	40.649 ¹⁴⁰	54.32 ¹⁶	06.191 ¹³⁸	10.78 ⁶⁷	36.936 ¹⁷⁷	15.61 ⁹⁵
15.8	40.511 ¹³⁸	53.93 ³⁹	06.055 ¹³⁶	11.40 ⁶²	36.758 ¹⁷⁸	16.30 ⁶⁹
25.7	40.381 ¹³⁰	53.33 ⁶⁰	05.928 ¹²⁷	11.97 ⁵⁷	36.590 ¹⁶⁸	16.70 ⁴⁰
Dec. 5.7	40.265 ¹¹⁶	52.53 ⁸⁰	05.817 ¹¹¹	12.45 ⁴⁸	36.438 ¹⁵²	16.79 ⁹
15.7	40.167 ⁹⁸	51.55 ⁹⁸	05.726 ⁹¹	12.83 ³⁸	36.311 ¹²⁷	16.57 ²²
25.6	40.092 ⁷⁵	50.42 ¹¹³	05.660 ⁶⁶	13.11 ²⁸	36.213 ⁹⁸	16.05 ⁵²
35.6	40.041 ⁵¹	49.18 ¹²⁴	05.620 ⁴⁰	13.28 ¹⁷	36.149 ⁶⁴	15.24 ⁸¹
Mean Place	38.933	39.22	04.144	16.90	34.502	14.97
Sec δ , Tan δ	1.014	-0.168	1.043	-0.295	1.264	-0.773
L a , L δ	0.00	+0.3	0.00	+0.3	+0.01	+0.3
ω a , ω δ	-0.01	-0.6	+0.02	-0.6	+0.04	-0.5
Authority and Catalogue No.	A. E.	1345	A. E.	1349	A. E.	1356

APPARENT PLACES OF STARS, 1928.

417

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	16 Pegasi.		α Aquarii.		ι Pegasi.	
	5.05	B 3	3.19	G 0	3.96	F 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 21 49	[°] ['] 25 34	^h ^m 22 02	[°] ['] 0 39	^h ^m 22 03	[°] ['] 24 59
Jan. 1.6	45.052 ^s 68	67.64 ["] 183	03.320 ^s 43	80.80 ["] 82	37.511 ^s 77	33.43 ["] 172
11.6	44.984 39	65.81 199	03.277 18	81.62 79	37.434 49	31.71 188
21.6	44.945 7	63.82 206	03.259 9	82.41 72	37.385 18	29.83 197
31.6	44.938	61.76	03.268	83.13	37.367	27.86
Feb. 10.5	44.966 28	59.71 205	03.306 38	83.74 61	37.381 14	25.89 197
20.5	45.030 64	57.75 196	03.373 67	84.19 45	37.431 50	24.00 189
Mar. 1.5	45.131 101	55.98 177	03.471 98	84.46 27	37.518 87	22.28 172
11.4	45.270 139	54.48 150	03.601 130	84.49 3	37.642 124	20.80 148
21.4	45.445 175	53.31 117	03.763 162	84.26 23	37.804 162	19.64 116
31.4	45.656 211	52.54 77	03.957 194	83.78 48	38.004 200	18.86 78
Apr. 10.4	45.900 244	52.20 34	04.182 225	83.01 77	38.238 234	18.50 36
20.3	46.174 274	52.32 12	04.434 252	81.97 104	38.503 265	18.58 8
30.3	46.472 298	52.89 57	04.711 277	80.68 129	38.794 291	19.11 53
May 10.3	46.787 315	53.91 102	05.006 295	79.16 152	39.106 312	20.07 96
20.3	47.112 325	55.34 143	05.315 309	77.47 169	39.430 324	21.44 137
30.2	47.440 328	57.14 180	05.630 315	75.64 183	39.759 329	23.18 174
June 9.2	47.761 321	59.25 211	05.944 314	73.73 191	40.084 325	25.23 205
19.2	48.068 307	61.62 237	06.248 304	71.79 194	40.397 313	27.54 231
29.1	48.353 285	64.17 255	06.536 288	69.87 192	40.690 293	30.04 250
July 9.1	48.608 255	66.85 268	06.800 264	68.02 185	40.955 265	32.68 264
19.1	48.828 220	69.58 273	07.033 233	66.30 172	41.187 232	35.37 269
29.1	49.007 179	72.30 272	07.230 197	64.73 157	41.379 192	38.06 269
Aug. 8.0	49.141 134	74.95 265	07.386 156	63.34 139	41.528 149	40.69 263
18.0	49.228 87	77.47 252	07.501 115	62.15 119	41.632 104	43.21 252
28.0	49.269 41	79.83 236	07.571 70	61.19 96	41.691 59	45.57 236
Sept. 7.0	49.266 3	81.97 214	07.599 28	60.45 74	41.705 14	47.72 215
16.9	49.221 45	83.86 189	07.587 12	59.93 52	41.676 29	49.64 192
26.9	49.140 81	85.47 161	07.539 48	59.63 30	41.611 65	51.28 164
Oct. 6.9	49.028 112	86.77 130	07.461 78	59.52 11	41.514 97	52.63 155
16.8	48.893 135	87.75 98	07.360 101	59.59 7	41.392 122	53.66 103
26.8	48.741 152	88.38 63	07.242 118	59.81 22	41.252 140	54.36 70
Nov. 5.8	48.581 160	88.66 28	07.116 126	60.18 37	41.101 151	54.72 36
15.8	48.419 162	88.58 8	06.989 127	60.67 49	40.946 155	54.73 1
25.7	48.262 157	88.13 45	06.867 122	61.26 59	40.794 152	54.38 35
Dec. 5.7	48.117 145	87.34 79	06.755 112	61.93 67	40.650 144	53.69 69
15.7	47.989 128	86.22 112	06.658 97	62.67 74	40.520 130	52.68 101
25.7	47.881 108	84.80 142	06.581 77	63.45 78	40.408 112	51.36 132
35.6	47.799 82	83.12 168	06.525 56	64.25 80	40.319 89	49.79 157
Mean Place	46.984	68.62	05.170	72.80	39.380	34.37
Sec δ, Tan δ	1.109	+0.479	1.000	-0.012	1.103	+0.466
L α, L δ	-0.01	+0.3	0.00	+0.3	-0.01	+0.3
ω α, ω δ	-0.03	-0.5	0.00	-0.5	-0.03	-0.5
Authority and Catalogue No.	A. E.	1357	A. E.	1370	A. N.	1375

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Gruis.		ζ Cephei.		θ Aquarii.	
	2.16	B 5	3.62	K 0	4.32	K 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 22 03	[°] ['] 47 18	^h ^m 22 08	[°] ['] 57 50	^h ^m 22 13	[°] ['] 8 08
Jan. 1.6	39.860 ^s	56.08	18.802 ^s	52.31	00.300 ^s	42.73
11.6	39.778 ⁸²	54.73 ¹³⁵	18.560 ²⁴²	50.14 ²¹⁷	00.252 ⁴⁸	43.22 ⁴⁹
21.6	39.738 ⁴⁰	53.06 ¹⁶⁷	18.367 ¹⁹³	47.60 ²⁵⁴	00.228 ²⁴	43.61 ³⁹
31.6	39.742 ⁴	51.13 ¹⁹³	18.231 ¹³⁶	44.77 ²⁸³	00.231 ³	43.89 ²⁸
Feb. 10.5	39.791 ⁴⁹	48.97 ²¹⁶	18.158 ⁷³	41.77 ³⁰⁰	00.262 ³¹	44.03 ¹⁴
20.5	39.885 ⁹⁴	46.64 ²³³	18.153 ⁵	38.71 ³⁰⁶	00.322 ⁶⁰	44.01 ²
Mar. 1.5	40.024 ¹³⁹	44.17 ²⁴⁷	18.221 ⁶⁸	35.71 ³⁰⁰	00.413 ⁹¹	43.79 ²²
11.5	40.209 ¹⁸⁵	41.63 ²⁵⁴	18.360 ¹³⁹	32.91 ²⁸⁰	00.536 ¹²³	43.35 ⁴⁴
21.4	40.438 ²²⁹	39.05 ²⁵⁸	18.570 ²¹⁰	30.41 ²⁵⁰	00.691 ¹⁵⁵	42.69 ⁶⁶
31.4	40.710 ²⁷²	36.50 ²⁵⁵	18.847 ²⁷⁷	28.31 ²¹⁰	00.879 ¹⁸⁸	41.80 ⁸⁹
Apr. 10.4	41.022 ³¹²	34.02 ²⁴⁸	19.184 ³³⁷	26.69 ¹⁶²	01.099 ²²⁰	40.68 ¹¹²
20.3	41.372 ³⁵⁰	31.65 ²³⁷	19.573 ³⁸⁹	25.62 ¹⁰⁷	01.348 ²⁴⁹	39.35 ¹³³
30.3	41.754 ³⁸²	29.46 ²¹⁹	20.002 ⁴²⁹	25.13 ⁴⁹	01.622 ²⁷⁴	37.83 ¹⁵²
May 10.3	42.161 ⁴⁰⁷	27.48 ¹⁹⁸	20.459 ⁴⁵⁷	25.22 ⁹	01.918 ²⁹⁶	36.17 ¹⁶⁶
20.3	42.587 ⁴²⁶	25.77 ¹⁷¹	20.932 ⁴⁷³	25.91 ⁶⁹	02.229 ³¹¹	34.39 ¹⁷⁸
30.2	43.023 ⁴³⁶	24.37 ¹⁴⁰	21.408 ⁴⁷⁶	27.16 ¹²⁵	02.548 ³¹⁹	32.54 ¹⁸⁵
June 9.2	43.458 ⁴³⁵	23.32 ¹⁰⁵	21.870 ⁴⁶²	28.94 ¹⁷⁸	02.868 ³²⁰	30.69 ¹⁸⁵
19.2	43.882 ⁴²⁴	22.63 ⁶⁹	22.309 ⁴³⁹	31.19 ²²⁵	03.181 ³¹³	28.88 ¹⁸¹
29.2	44.286 ⁴⁷⁴	22.32 ³¹	22.712 ⁴⁰³	33.85 ²⁶⁶	03.480 ²⁹⁹	27.15 ¹⁷³
July 9.1	44.659 ³⁷³	22.41 ⁹	23.068 ³⁵⁶	36.85 ³⁰⁰	03.756 ²⁷⁶	25.56 ¹⁵⁹
19.1	44.991 ³³²	22.89 ⁴⁸	23.369 ³⁰¹	40.10 ³²⁵	04.003 ²⁴⁷	24.13 ¹⁴³
29.1	45.274 ²⁸³	23.74 ⁸⁵	23.608 ²³⁹	43.54 ³⁴⁴	04.215 ²¹²	22.90 ¹²³
Aug 8.0	45.500 ²²⁶	24.92 ¹¹⁸	23.779 ¹⁷¹	47.10 ³⁵⁶	04.386 ¹⁷¹	21.90 ¹⁰⁰
18.0	45.666 ¹⁶⁶	26.39 ¹⁴⁷	23.881 ¹⁰²	50.68 ³⁵⁸	04.515 ¹²⁹	21.13 ⁷⁷
28.0	45.769 ¹⁰³	28.09 ¹⁷⁰	23.912 ³¹	54.21 ³⁵³	04.601 ⁸⁶	20.59 ⁵⁴
Sept. 7.0	45.808 ³⁹	29.94 ¹⁸⁵	23.874 ³⁸	57.63 ³⁴²	04.642 ⁴¹	20.28 ³¹
16.9	45.786 ²²	31.87 ¹⁹³	23.772 ¹⁰²	60.85 ³²²	04.643 ¹	20.18 ¹⁰
26.9	45.707 ⁷⁹	33.81 ¹⁹⁴	23.610 ¹⁶²	63.82 ²⁹⁷	04.606 ³⁷	20.27 ⁹
Oct. 6.9	45.580 ¹²⁷	35.66 ¹⁸⁵	23.395 ²¹⁵	66.47 ²⁶⁵	04.538 ⁶⁸	20.53 ²⁶
16.9	45.414 ¹⁶⁶	37.34 ¹⁶⁸	23.136 ²⁵⁹	68.74 ²²⁷	04.445 ⁹³	20.91 ³⁸
26.8	45.218 ¹⁹⁶	38.78 ¹⁴⁴	22.841 ²⁹⁵	70.58 ¹⁸⁴	04.333 ¹¹²	21.40 ⁴⁹
Nov. 5.8	45.006 ²¹²	39.93 ¹¹⁵	22.520 ³²¹	71.94 ¹³⁶	04.211 ¹²²	21.95 ⁵⁵
15.8	44.789 ²¹⁷	40.73 ⁸⁰	22.184 ³³⁶	72.79 ⁸⁵	04.086 ¹²⁵	22.56 ⁶¹
25.7	44.577 ²¹²	41.14 ⁴¹	21.841 ³⁴³	73.08 ²⁹	03.965 ¹²¹	23.18 ⁶²
Dec. 5.7	44.380 ¹⁰⁷	41.15 ¹	21.503 ³³⁸	72.82 ²⁶	03.853 ¹¹²	23.80 ⁶²
15.7	44.208 ¹⁷²	40.76 ³⁹	21.179 ³²⁴	71.99 ⁸³	03.754 ⁹⁹	24.40 ⁶⁰
25.7	44.068 ¹⁴⁰	39.97 ⁷⁹	20.880 ²⁹⁹	70.62 ¹³⁷	03.673 ⁸¹	24.97 ⁵⁷
35.6	43.964 ¹⁰⁴	38.80 ¹¹⁷	20.615 ²⁶⁵	68.76 ¹⁸⁶	03.614 ⁵⁹	25.48 ⁵¹
Mean Place	42.232	36.92	21.163	45.72	02.119	32.50
Sec δ , Tan δ	1.475	-1.084	1.879	+1.591	1.010	-0.143
L α , L δ	+0.01	+0.3	-0.02	+0.4	0.00	+0.4
ω α , ω δ	+0.06	-0.5	-0.09	-0.5	+0.01	-0.5
Authority and Catalogue No.	A. E.	1374	A. E.	1381	A. E.	1386

APPARENT PLACES OF STARS, 1928. 419

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Tucanae.		γ Aquarii.		σ Aquarii.	
	2.91	K 2	3.97	A 0	4.89	A 0
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 22 13	^o ['] 60 36	^h ^m 22 17	^o ['] 1 44	^h ^m 22 26	^o ['] 11 02
Jan. 1.7	32.30 ^s	90.37 ["]	54.485 ^s	70.68 ["]	48.531 ^s	60.13 ["]
11.6	32.14 ¹⁶	88.50 ¹⁸⁷	54.432 ⁵³	71.43 ⁷⁵	48.473 ⁵⁸	60.49 ³⁶
21.6	32.03 ¹¹	86.24 ²²⁶	54.402 ³⁰	72.13 ⁷⁰	48.439 ³⁴	60.73 ²⁴
31.6	31.99 ⁴	83.69 ²⁵⁵	54.397 ⁵	72.75 ⁶²	48.429 ¹⁰	60.84 ¹¹
Feb. 10.5	32.01 ²	80.89 ²⁸⁰	54.420 ²³	73.26 ⁵¹	48.447 ¹⁸	60.79 ⁵
20.5	32.10 ⁹	77.92 ²⁹⁷	54.472 ⁵²	73.62 ³⁶	48.494 ⁴⁷	60.56 ²³
Mar. 1.5	32.25 ¹⁵	74.83 ³⁰⁹	54.554 ⁸²	73.79 ¹⁷	48.571 ⁷⁷	60.14 ⁴²
11.5	32.47 ²²	71.71 ³¹²	54.669 ¹¹⁵	73.73 ⁶	48.680 ¹⁰⁹	59.50 ⁶⁴
21.4	32.74 ²⁷	68.61 ³¹⁰	54.817 ¹⁴⁸	73.43 ³⁰	48.824 ¹⁴⁴	58.64 ⁸⁶
31.4	33.08 ³⁴	65.60 ³⁰¹	54.998 ¹⁸¹	72.86 ⁵⁷	49.001 ¹⁷⁷	57.57 ¹⁰⁷
Apr. 10.4	33.47 ³⁹	62.74 ²⁸⁶	55.211 ²¹³	72.03 ⁸³	49.211 ²¹⁰	56.29 ¹²⁸
20.4	33.92 ⁴⁵	60.08 ²⁶⁶	55.454 ²⁴³	70.93 ¹¹⁰	49.452 ²⁴¹	54.81 ¹⁴⁸
30.3	34.41 ⁴⁹	57.70 ²³⁸	55.723 ²⁶⁹	69.59 ¹³⁴	49.721 ²⁶⁹	53.17 ¹⁶⁴
May 10.3	34.93 ⁵²	55.63 ²⁰⁷	56.014 ²⁹¹	68.04 ¹⁵⁵	50.014 ²⁹³	51.40 ¹⁷⁷
20.3	35.48 ⁵⁵	53.93 ¹⁷⁰	56.320 ³⁰⁶	66.31 ¹⁷³	50.323 ³⁰⁹	49.55 ¹⁸⁵
30.2	36.04 ⁵⁶	52.63 ¹³⁰	56.635 ³¹⁵	64.46 ¹⁸⁵	50.644 ³²¹	47.67 ¹⁸⁸
June 9.2	36.61 ⁵⁷	51.76 ⁸⁷	56.952 ³¹⁷	62.52 ¹⁹⁴	50.968 ³²⁴	45.80 ¹⁸⁷
19.2	37.16 ⁵⁵	51.35 ⁴¹	57.262 ³¹⁰	60.57 ¹⁹⁵	51.287 ³¹⁹	43.99 ¹⁸¹
29.2	37.69 ⁵³	51.41 ⁶	57.558 ²⁹⁶	58.65 ¹⁹²	51.594 ³⁰⁷	42.30 ¹⁶⁹
July 9.1	38.18 ⁴⁹	51.92 ⁵¹	57.832 ²⁷⁴	56.81 ¹⁸⁴	51.880 ²⁸⁶	40.76 ¹⁵⁴
19.1	38.62 ⁴⁴	52.88 ⁹⁶	58.077 ²⁴⁵	55.10 ¹⁷¹	52.138 ²⁵⁸	39.41 ¹³⁵
29.1	39.00 ³⁸	54.25 ¹³⁷	58.288 ²¹¹	53.54 ¹⁵⁶	52.363 ²²⁵	38.29 ¹¹²
Aug. 8.1	39.30 ³⁰	55.98 ¹⁷³	58.459 ¹⁷¹	52.18 ¹³⁶	52.548 ¹⁸⁵	37.41 ⁸⁸
18.0	39.52 ²²	58.01 ²⁰³	58.589 ¹³⁰	51.02 ¹¹⁶	52.691 ¹⁴³	36.77 ⁶⁴
28.0	39.66 ¹⁴	60.27 ²²⁶	58.676 ⁸⁷	50.10 ⁹²	52.791 ¹⁰⁰	36.38 ³⁹
Sept. 7.0	39.71 ⁵	62.67 ²⁴⁰	58.720 ⁴⁴	49.40 ⁷⁰	52.847 ⁵⁶	36.23 ¹⁵
16.9	39.68 ³	65.12 ²⁴⁵	58.723 ³	48.92 ⁴⁸	52.862 ¹⁵	36.29 ⁶
26.9	39.57 ¹¹	67.52 ²⁴⁰	58.690 ³³	48.66 ²⁶	52.838 ²⁴	36.54 ²⁵
Oct. 6.9	39.39 ¹⁸	69.78 ²²⁶	58.626 ⁶⁴	48.59 ⁷	52.781 ⁵⁷	36.94 ⁴⁰
16.9	39.15 ²⁴	71.80 ²⁰²	58.536 ⁹⁰	48.70 ¹¹	52.697 ⁸⁴	37.46 ⁵²
26.8	38.86 ²⁹	73.49 ¹⁶⁹	58.429 ¹⁰⁷	48.96 ²⁶	52.593 ¹⁰⁴	38.07 ⁶¹
Nov. 5.8	38.54 ³²	74.78 ¹²⁹	58.311 ¹¹⁸	49.34 ³⁸	52.476 ¹¹⁷	38.73 ⁶⁶
15.8	38.21 ³³	75.61 ⁸³	58.188 ¹²³	49.84 ⁵⁰	52.354 ¹²²	39.40 ⁶⁷
25.8	37.88 ³³	75.94 ³³	58.068 ¹²⁰	50.43 ⁵⁹	52.233 ¹²¹	40.07 ⁶⁷
Dec. 5.7	37.57 ³¹	75.76 ¹⁸	57.955 ¹¹³	51.08 ⁶⁵	52.119 ¹¹⁴	40.69 ⁶²
15.7	37.29 ²⁸	75.08 ⁶⁸	57.855 ¹⁰⁰	51.78 ⁷⁰	52.016 ¹⁰³	41.26 ⁵⁷
25.7	37.04 ²⁵	73.90 ¹¹⁸	57.772 ⁸³	52.51 ⁷³	51.928 ⁸⁸	41.76 ⁵⁰
35.6	36.85 ¹⁹	72.26 ¹⁶⁴	57.708 ⁶⁴	53.25 ⁷⁴	51.861 ⁶⁷	42.17 ⁴¹
Mean Place	35.105	68.75	56.261	62.24	50.287	48.88
Sec δ , Tan δ	2.038	-1.776	1.000	-0.031	1.019	-0.195
L α , L δ	+0.02	+0.4	0.00	+0.4	0.00	+0.4
ω α , ω δ	+0.11	-0.5	0.00	-0.4	+0.01	-0.4
Authority and Catalogue No.	A. E.	1387	A. E.	1391		1404

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	η Aquarii. 4.13 B 8		κ Aquarii. 5.33 K o		ξ Pegasi. 3.61 B 8	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
Mean Solar Date.	^h 22 ^m 31	^o 0 ['] 29	^h 22 ^m 33	^o 4 ['] 35	^h 22 ^m 37	^o 10 ['] 27
Jan. 1.7	37.686 ^s	28.71	59.986 ^s	69.01	50.500 ^s	13.68
11.6	37.623 ⁶³	29.48 ⁷⁷	59.923 ⁶³	69.64 ⁶³	50.425 ⁷⁵	12.57 ¹¹¹
21.6	37.582 ⁴¹	30.22 ⁷⁴	59.881 ⁴²	70.19 ⁵⁵	50.370 ⁵⁵	11.39 ¹¹⁸
31.6	37.564 ¹⁸	30.88 ⁶⁶	59.863 ¹⁸	70.64 ⁴⁵	50.340 ³⁰	10.20 ¹¹⁹
Feb. 10.6	37.573 ⁹	31.44 ⁵⁶	59.871 ⁸	70.95 ³¹	50.336 ⁴	09.07 ¹¹³
20.5	37.611 ³⁸	31.85 ⁴¹	59.908 ³⁷	71.11 ¹⁶	50.361 ²⁵	08.03 ¹⁰⁴
Mar. 1.5	37.679 ⁶⁸	32.07 ²²	59.974 ⁶⁶	71.08 ³	50.417 ⁵⁶	07.16 ⁸⁷
11.5	37.779 ¹⁰⁰	32.08 ¹	60.073 ⁹⁹	70.83 ²⁵	50.508 ⁹¹	06.50 ⁶⁶
21.4	37.913 ¹³⁴	31.83 ²⁵	60.206 ¹³³	70.34 ⁴⁹	50.634 ¹²⁶	06.11 ³⁹
31.4	38.081 ¹⁶⁸	31.32 ⁵¹	60.373 ¹⁶⁷	69.60 ⁷⁴	50.796 ¹⁶²	06.03 ⁸
Apr. 10.4	38.283 ²⁰²	30.54 ⁷⁸	60.574 ²⁰¹	68.61 ⁹⁹	50.993 ¹⁹⁷	06.27 ²⁴
20.4	38.516 ²³³	29.48 ¹⁰⁶	60.806 ²³²	67.38 ¹²³	51.223 ²³⁰	06.85 ⁵⁸
30.3	38.777 ²⁶¹	28.17 ¹³¹	61.067 ²⁶¹	65.94 ¹⁴⁴	51.483 ²⁶⁰	07.76 ⁹¹
May 10.3	39.062 ²⁸⁵	26.64 ¹⁵³	61.352 ²⁸⁵	64.30 ¹⁶⁴	51.767 ²⁸⁴	08.99 ¹²³
20.3	39.365 ³⁰³	24.92 ¹⁷²	61.656 ³⁰⁴	62.51 ¹⁷⁹	52.070 ³⁰³	10.51 ¹⁵²
30.3	39.679 ³¹⁴	23.06 ¹⁸⁶	61.971 ³¹⁵	60.63 ¹⁸⁸	52.384 ³¹⁴	12.28 ¹⁷⁷
June 9.2	39.996 ³¹⁷	21.10 ¹⁹⁶	62.290 ³¹⁹	58.69 ¹⁹⁴	52.702 ³¹⁸	14.25 ¹⁹⁷
19.2	40.309 ³¹³	19.11 ¹⁹⁹	62.605 ³¹⁵	56.76 ¹⁹³	53.016 ³¹⁴	16.37 ²¹²
29.2	40.610 ³⁰¹	17.14 ¹⁹⁷	62.909 ³⁰⁴	54.88 ¹⁸⁸	53.318 ³⁰²	18.56 ²¹⁹
July 9.1	40.890 ²⁸⁰	15.23 ¹⁹¹	63.192 ²⁸³	53.10 ¹⁷⁸	53.599 ²⁸¹	20.79 ²²³
19.1	41.143 ²⁵³	13.43 ¹⁸⁰	63.449 ²⁵⁷	51.46 ¹⁶⁴	53.854 ²⁵⁵	23.00 ²²¹
29.1	41.364 ²²¹	11.78 ¹⁶⁵	63.673 ²²⁴	50.00 ¹⁴⁶	54.075 ²²¹	25.12 ²¹²
Aug. 8.1	41.547 ¹⁸³	10.32 ¹⁴⁶	63.860 ¹⁸⁷	48.76 ¹²⁴	54.259 ¹⁸⁴	27.13 ²⁰¹
18.0	41.689 ¹⁴²	09.07 ¹²⁵	64.005 ¹⁴⁵	47.74 ¹⁰²	54.402 ¹⁴³	28.98 ¹⁸⁵
28.0	41.788 ⁹⁹	08.05 ¹⁰²	64.108 ¹⁰³	46.95 ⁷⁹	54.503 ¹⁰¹	30.64 ¹⁶⁶
Sept. 7.0	41.845 ⁵⁷	07.26 ⁷⁹	64.169 ⁶¹	46.41 ⁵⁴	54.561 ⁵⁸	32.08 ¹⁴⁴
17.0	41.861 ¹⁶	06.69 ⁵⁷	64.189 ²⁰	46.08 ³³	54.579 ¹⁸	33.29 ¹²¹
26.9	41.840 ²¹	06.34 ³⁵	64.171 ¹⁸	45.97 ¹¹	54.560 ¹⁹	34.27 ⁹⁸
Oct. 6.9	41.788 ⁵²	06.20 ¹⁴	64.121 ⁵⁰	46.04 ⁷	54.509 ⁵¹	35.00 ⁷³
16.9	41.709 ⁷⁹	06.25 ⁵	64.043 ⁷⁸	46.28 ²⁴	54.431 ⁷⁸	35.49 ⁴⁹
26.8	41.610 ⁹⁹	06.46 ²¹	63.946 ⁹⁷	46.65 ³⁷	54.333 ⁹⁸	35.76 ²⁷
Nov. 5.8	41.498 ¹¹²	06.81 ³⁵	63.835 ¹¹¹	47.13 ⁴⁸	54.219 ¹¹⁴	35.79 ³
15.8	41.380 ¹¹⁸	07.27 ⁴⁶	63.718 ¹¹⁷	47.69 ⁵⁶	54.099 ¹²⁰	35.60 ¹⁹
25.8	41.262 ¹¹⁸	07.84 ⁵⁷	63.600 ¹¹⁸	48.31 ⁶²	53.976 ¹²³	35.21 ³⁹
Dec. 5.7	41.149 ¹¹³	08.49 ⁶⁵	63.487 ¹¹³	48.96 ⁶⁵	53.857 ¹¹⁹	34.62 ⁵⁹
15.7	41.046 ¹⁰³	09.20 ⁷¹	63.384 ¹⁰³	49.62 ⁶⁶	53.746 ¹¹¹	33.86 ⁷⁶
25.7	40.956 ⁹⁰	09.94 ⁷⁴	63.295 ⁸⁹	50.28 ⁶⁶	53.647 ⁹⁹	32.94 ⁹²
35.7	40.885 ⁷¹	10.69 ⁷⁵	63.222 ⁷³	50.91 ⁶³	53.564 ⁸³	31.91 ¹⁰³
Mean Place	39.390	20.56	61.684	59.61	52.173	18.47
Sec δ , Tan δ	1.000	-0.009	1.003	-0.080	1.017	+0.185
L a , L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω a , ω δ	0.00	-0.4	+0.01	-0.4	-0.01	-0.4
Authority and Catalogue No.	A. E.	1409		1410	A. E.	1415

APPARENT PLACES OF STARS, 1928. 421

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	β Gruis.		η Pegasi.		ϵ Gruis.	
	2.24	M b	3.10	G o	3.69	A 2
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 22 38	[°] ['] 47 15	^h ^m 22 39	[°] ['] 29 50	^h ^m 22 44	[°] ['] 51 41
Jtn. 1.7	20.547 ^s ₁₂₀	62.23 ["] ₁₁₅	35.665 ^s ₁₁₂	40.46 ["] ₁₅₈	10.812 ^s ₁₄₈	66.67 ["] ₁₂₉
11.6	20.427 ^s ₈₅	61.08 ["] ₁₅₁	35.553 ^s ₈₈	38.88 ["] ₁₈₀	10.664 ^s ₁₀₉	65.38 ["] ₁₆₇
21.6	20.342 ^s ₄₆	59.57 ["] ₁₈₄	35.465 ^s ₆₁	37.08 ["] ₁₉₆	10.555 ^s ₆₆	63.71 ["] ₂₀₃
31.6	20.296 ^s	57.73 ["]	35.404 ^s	35.12 ["]	10.489 ^s	61.68 ["]
Feb. 10.6	20.291 ^s ₅	55.61 ["] ₂₁₂	35.375 ^s ₂₀	33.09 ["] ₂₀₃	10.469 ^s ₂₀	59.36 ["] ₂₃₂
20.5	20.329 ^s ₃₈	53.26 ["] ₂₃₅	35.380 ^s ₅	31.07 ["] ₂₀₂	10.496 ^s ₂₇	56.79 ["] ₂₅₇
Mar. 1.5	20.413 ^s ₈₄	50.72 ["] ₂₅₄	35.424 ^s ₄₄	29.15 ["] ₁₉₂	10.572 ^s ₇₆	54.04 ["] ₂₇₅
11.5	20.543 ^s ₁₃₀	48.05 ["] ₂₆₇	35.509 ^s ₈₅	27.43 ["] ₁₇₂	10.609 ^s ₁₂₇	51.16 ["] ₂₈₈
21.4	20.719 ^s ₁₇₆	45.30 ["] ₂₇₅	35.636 ^s ₁₂₇	25.97 ["] ₁₄₆	10.878 ^s ₁₇₉	48.20 ["] ₂₉₆
31.4	20.942 ^s ₂₂₃	42.51 ["] ₂₇₉	35.805 ^s ₁₆₉	24.86 ["] ₁₁₁	11.108 ^s ₂₃₀	45.24 ["] ₂₉₆
Apr. 10.4	21.211 ^s ₂₆₉	39.75 ["] ₂₇₆	36.014 ^s ₂₀₉	24.15 ["] ₇₁	11.387 ^s ₂₇₉	42.32 ["] ₂₉₂
20.4	21.521 ^s ₃₁₀	37.08 ["] ₂₆₇	36.262 ^s ₂₄₈	23.87 ["] ₂₈	11.712 ^s ₃₂₅	39.49 ["] ₂₈₃
30.3	21.871 ^s ₃₅₀	34.55 ["] ₂₅₃	36.543 ^s ₂₈₁	24.04 ["] ₁₇	12.082 ^s ₃₇₀	36.86 ["] ₂₆₃
May 10.3	22.253 ^s ₃₈₂	32.21 ["] ₂₃₄	36.850 ^s ₃₀₇	24.68 ["] ₆₄	12.487 ^s ₄₀₅	34.44 ["] ₂₄₂
20.3	22.660 ^s ₄₀₇	30.13 ["] ₂₀₈	37.177 ^s ₃₂₇	25.75 ["] ₁₀₇	12.921 ^s ₄₃₄	32.30 ["] ₂₁₄
30.3	23.086 ^s ₄₂₆	28.33 ["] ₁₈₀	37.516 ^s ₃₃₉	27.23 ["] ₁₄₈	13.375 ^s ₄₅₄	30.50 ["] ₁₈₀
June 9.2	23.519 ^s ₄₃₃	26.88 ["] ₁₄₅	37.857 ^s ₃₄₁	29.07 ["] ₁₈₄	13.839 ^s ₄₆₄	29.06 ["] ₁₄₄
19.2	23.950 ^s ₄₃₁	25.81 ["] ₁₀₇	38.192 ^s ₃₃₅	31.24 ["] ₂₁₇	14.302 ^s ₄₆₃	28.03 ["] ₁₀₃
29.2	24.368 ^s ₄₁₈	25.14 ["] ₆₇	38.511 ^s ₃₁₉	33.66 ["] ₂₄₂	14.753 ^s ₄₅₁	27.44 ["] ₅₉
July 9.1	24.762 ^s ₃₉₄	24.89 ["] ₂₅	38.806 ^s ₂₉₅	35.27 ["] ₂₆₁	15.180 ^s ₄₂₇	27.30 ["] ₁₄
19.1	25.123 ^s ₃₆₁	25.06 ["] ₁₇	39.071 ^s ₂₆₅	39.01 ["] ₂₇₄	15.571 ^s ₃₉₁	27.59 ["] ₂₉
29.1	25.440 ^s ₃₁₇	25.64 ["] ₅₈	39.300 ^s ₂₂₉	41.81 ["] ₂₈₀	15.917 ^s ₃₄₆	28.32 ["] ₇₃
Aug. 8.1	25.706 ^s ₂₆₆	26.61 ["] ₉₇	39.487 ^s ₁₈₇	44.61 ["] ₂₈₀	16.210 ^s ₂₉₃	29.46 ["] ₁₁₄
18.0	25.916 ^s ₂₁₀	27.92 ["] ₁₃₁	39.630 ^s ₁₄₃	47.36 ["] ₂₇₅	16.441 ^s ₂₃₁	30.95 ["] ₁₄₉
28.0	26.064 ^s ₁₄₈	29.52 ["] ₁₆₀	39.726 ^s ₉₆	49.99 ["] ₂₆₃	16.607 ^s ₁₆₆	32.74 ["] ₁₇₉
Sept. 7.0	26.150 ^s ₈₆	31.34 ["] ₁₈₂	39.777 ^s ₅₁	52.46 ["] ₂₄₇	16.704 ^s ₉₇	34.76 ["] ₂₀₂
17.0	26.174 ^s ₂₄	33.32 ["] ₁₉₈	39.785 ^s ₈	54.72 ["] ₂₂₆	16.734 ^s ₃₀	36.93 ["] ₂₁₇
26.9	26.139 ^s ₃₅	35.36 ["] ₂₀₄	39.752 ^s ₃₃	56.74 ["] ₂₀₂	16.700 ^s ₃₄	39.16 ["] ₂₂₃
Oct. 6.9	26.053 ^s ₈₆	37.39 ["] ₂₀₃	39.683 ^s ₆₉	58.47 ["] ₁₇₃	16.667 ^s ₉₃	41.36 ["] ₂₂₀
16.9	25.921 ^s ₁₃₂	39.31 ["] ₁₉₂	39.584 ^s ₉₉	59.90 ["] ₁₄₃	16.463 ^s ₁₄₄	43.43 ["] ₂₀₇
26.8	25.753 ^s ₁₆₈	41.03 ["] ₁₇₂	39.462 ^s ₁₂₂	61.01 ["] ₁₁₁	16.278 ^s ₁₈₅	45.29 ["] ₁₈₆
Nov. 5.8	25.560 ^s ₁₉₃	42.48 ["] ₁₄₅	39.322 ^s ₁₄₀	61.76 ["] ₇₅	16.064 ^s ₂₁₄	46.84 ["] ₁₅₅
15.8	25.353 ^s ₂₀₇	43.62 ["] ₁₁₄	39.171 ^s ₁₅₁	62.14 ["] ₃₈	15.832 ^s ₂₃₂	48.03 ["] ₁₁₉
25.8	25.143 ^s ₂₁₀	44.37 ["] ₇₅	39.016 ^s ₁₅₅	62.15 ["] ₁	15.593 ^s ₂₃₉	48.81 ["] ₇₈
Dec. 5.7	24.938 ^s ₂₀₅	44.71 ["] ₃₄	38.862 ^s ₁₅₄	61.78 ["] ₃₇	15.358 ^s ₂₃₅	49.15 ["] ₃₄
15.7	24.749 ^s ₁₈₉	44.62 ["] ₉	38.714 ^s ₁₄₈	61.05 ["] ₇₃	15.140 ^s ₂₁₈	49.02 ["] ₁₃
25.7	24.582 ^s ₁₆₇	44.11 ["] ₅₁	38.577 ^s ₁₃₇	59.98 ["] ₁₀₇	14.943 ^s ₁₉₇	48.43 ["] ₅₉
35.7	24.443 ^s ₁₃₉	43.19 ["] ₉₂	38.457 ^s ₁₂₀	58.59 ["] ₁₃₉	14.776 ^s ₁₆₇	47.38 ["] ₁₀₅
Mean Place	22.595	41.61	37.400	39.45	12.901	45.03
Sec δ , Tan δ	1.474	-1.082	1.153	+0.574	1.613	-1.266
L a , L δ	+0.01	+0.4	-0.01	+0.4	+0.01	+0.4
ω a , ω δ	+0.07	-0.4	-0.04	-0.3	+0.08	-0.3
Authority and Catalogue No.	A. E.	1416	A. E.	1418	A. E.	1421

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	μ Pegasi.		λ Aquarii.		δ Aquarii.	
	3.67	K o	3.84	M a	3.51	A 2
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ₂₂ ^m ₄₆	^o ₂₄ ['] ₁₃	^h ₂₂ ^m ₄₈	^o ₇ ['] ₅₇	^h ₂₂ ^m ₅₀	^o ₁₆ ['] ₁₂
Jan. 1.7	29.822 ^s	15.27 ["]	49.897 ^s	57.66 ["]	48.231 ^s	27.88 ["]
11.6	29.720 ¹⁰²	13.85 ¹⁴²	49.826 ⁷¹	58.14 ⁴⁸	48.156 ⁷⁵	28.05 ¹⁷
21.6	29.640 ⁸⁰	12.25 ¹⁶⁰	49.774 ⁵²	58.49 ³⁵	48.103 ⁵³	28.06 ¹
31.6	29.584 ⁵⁶	10.53 ¹⁷²	49.745 ²⁹	58.77 ²⁸	48.072 ³¹	27.88 ¹⁸
Feb. 10.6	29.557 ²⁷	08.77 ¹⁷⁶	49.741 ⁴	58.87 ¹⁰	48.067 ⁵	27.51 ³⁷
20.5	29.561 ⁴	07.04 ¹⁷³	49.764 ²³	58.79 ⁸	48.090 ²³	26.93 ⁵⁸
Mar. 1.5	29.602 ⁴¹	05.42 ¹⁶²	49.817 ⁵³	58.52 ²⁷	48.144 ⁵⁴	26.15 ⁷⁸
11.5	29.680 ⁷⁸	03.99 ¹⁴³	49.902 ⁸⁵	58.04 ⁴⁸	48.231 ⁸⁷	25.16 ⁹⁹
21.5	29.798 ¹¹⁸	02.83 ¹¹⁶	50.021 ¹¹⁹	57.33 ⁷¹	48.352 ¹²¹	23.96 ¹²⁰
31.4	29.957 ¹⁵⁹	01.99 ⁸⁴	50.176 ¹⁵⁵	56.38 ⁹⁵	48.509 ¹⁵⁷	22.56 ¹⁴⁰
Apr. 10.4	30.155 ¹⁹⁸	01.53 ⁴⁶	50.365 ¹⁸⁹	55.20 ¹¹⁸	48.701 ¹⁹²	20.97 ¹⁵⁹
20.4	30.389 ²³⁴	01.47 ⁶	50.588 ²²³	53.80 ¹⁴⁰	48.927 ²²⁶	19.22 ¹⁷⁵
30.3	30.657 ²⁶⁸	01.83 ³⁶	50.841 ²⁵³	52.21 ¹⁵⁹	49.185 ²⁵⁸	17.34 ¹⁸⁸
May 10.3	30.951 ²⁹⁴	02.60 ⁷⁷	51.121 ²⁸⁰	50.46 ¹⁷⁵	49.470 ²⁸⁵	15.38 ¹⁹⁶
20.3	31.266 ³¹⁵	03.77 ¹¹⁷	51.421 ³⁰⁰	48.59 ¹⁸⁷	49.777 ³⁰⁷	13.38 ²⁰⁰
30.3	31.593 ³²⁷	05.31 ¹⁵⁴	51.736 ³¹⁵	46.65 ¹⁹⁴	50.099 ³²²	11.39 ¹⁹⁹
June 9.2	31.925 ³³²	07.17 ¹⁸⁶	52.057 ³²¹	44.68 ¹⁹⁷	50.429 ³³⁰	09.45 ¹⁹⁴
19.2	32.253 ³²⁸	09.30 ²¹³	52.377 ³²⁰	42.75 ¹⁹³	50.758 ³²⁹	07.63 ¹⁸²
29.2	32.567 ³¹⁴	11.64 ²³⁴	52.688 ³¹¹	40.90 ¹⁸⁵	51.079 ³²¹	05.96 ¹⁶⁷
July 9.2	32.860 ²⁹³	14.13 ²⁴⁹	52.982 ²⁹⁴	39.18 ¹⁷²	51.383 ³⁰⁴	04.50 ¹⁴⁶
19.1	33.126 ²⁶⁶	16.73 ²⁶⁰	53.251 ²⁶⁹	37.63 ¹⁵⁵	51.662 ²⁷⁹	03.27 ¹²³
29.1	33.386 ²³⁰	19.35 ²⁶²	53.489 ²³⁸	36.28 ¹³⁵	51.910 ²⁴⁸	02.30 ⁹⁷
Aug. 8.1	33.548 ¹⁹²	21.93 ²⁵⁸	53.691 ²⁰²	35.16 ¹¹²	52.120 ²¹⁰	01.60 ⁷⁰
18.0	33.698 ¹⁵⁰	24.44 ²⁵¹	53.853 ¹⁶²	34.29 ⁸⁷	52.290 ¹⁷⁰	01.19 ⁴¹
28.0	33.804 ¹⁰⁶	26.81 ²³⁷	53.972 ¹¹⁹	33.67 ⁶²	52.416 ¹²⁶	01.05 ¹⁴
Sept. 7.0	33.866 ⁶²	29.01 ²²⁰	54.048 ⁷⁶	33.30 ³⁷	52.498 ⁸²	01.18 ¹³
17.0	33.886 ²⁰	31.00 ¹⁹⁹	54.083 ³⁵	33.16 ¹⁴	52.537 ³⁹	01.53 ³⁵
26.9	33.867 ¹⁹	32.75 ¹⁷⁵	54.080 ³	33.23 ⁷	52.535 ²	02.07 ⁵⁴
Oct. 6.9	33.814 ⁵³	34.24 ¹⁴⁹	54.043 ³⁷	33.49 ²⁶	52.498 ³⁷	02.76 ⁶⁹
16.9	33.731 ⁸³	35.44 ¹²⁰	53.977 ⁶⁶	33.89 ⁴⁰	52.431 ⁶⁷	03.56 ⁸⁰
26.9	33.625 ¹⁰⁶	36.33 ⁸⁹	53.889 ⁸⁸	34.41 ⁵²	52.340 ⁹¹	04.42 ⁸⁶
Nov. 5.8	33.503 ¹²²	36.92 ⁵⁹	53.786 ¹⁰³	35.00 ⁵⁹	52.232 ¹⁰⁸	05.29 ⁸⁷
15.8	33.369 ¹³⁴	37.19 ²⁷	53.673 ¹¹³	35.65 ⁶⁵	52.115 ¹¹⁷	06.13 ⁸⁴
25.8	33.230 ¹³⁹	37.11 ⁸	53.558 ¹¹⁵	36.32 ⁶⁷	51.994 ¹²¹	06.91 ⁷⁸
Dec. 5.7	33.091 ¹³⁹	36.72 ³⁹	53.445 ¹¹³	36.98 ⁶⁶	51.875 ¹¹⁹	07.58 ⁶⁷
15.7	32.958 ¹³³	36.01 ⁷¹	53.339 ¹⁰⁶	37.61 ⁶³	51.764 ¹¹¹	08.13 ⁵⁵
25.7	32.835 ¹²³	35.01 ¹⁰⁰	53.245 ⁹⁴	38.20 ⁵⁹	51.666 ⁹⁸	08.55 ⁴²
35.7	32.726 ¹⁰⁹	33.75 ¹²⁶	53.166 ⁷⁹	38.71 ⁵¹	51.584 ⁸²	08.81 ²⁶
Mean Place	31.491	15.79	51.523	47.09	49.869	14.77
Sec δ , Tan δ	1.097	+0.450	1.010	-0.140	1.041	-0.291
L a , L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω a , ω δ	-0.03	-0.3	+0.01	-0.3	+0.02	-0.3
Authority and Catalogue No.	A. N.	1423	A. E.	1428	A. E.	1430

APPARENT PLACES OF STARS, 1928.

423

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Piscis Australis.		β Piscium.		β Pegasi.	
	1.29	A 3	4.58	B 5 p	2.61	M a.
Mean Solar Date.	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 22 53	^c ['] 30 00	^h ^m 23 00	^o ['] 3 25	^h ^m 23 00	^c ['] 27 41
Jan. 1.7	38.860 ⁸⁹	32.08 ³⁴	11.147 ⁸²	48.73 ⁸⁴	15.173 ¹¹⁵	31.96 ¹³⁸
11.7	38.771 ⁶⁵	31.74 ⁶³	11.065 ⁶³	47.89 ⁸⁴	15.058 ⁹⁷	30.58 ¹⁶⁰
21.6	38.706 ⁴⁰	31.11 ⁹⁰	11.002 ⁴⁴	47.05 ⁸⁰	14.961 ⁷⁴	28.98 ¹⁷⁶
31.6	38.666 ¹⁰	30.21 ¹¹⁶	10.958 ²⁰	46.25 ⁷¹	14.887 ⁴⁶	27.22 ¹⁸⁴
Feb. 10.6	38.656 ²²	29.05 ¹³⁹	10.938 ⁷	45.54 ⁵⁸	14.841 ¹³	25.38 ¹⁸⁴
20.5	38.678 ⁵⁵	27.66 ¹⁶¹	10.945 ³⁷	44.96 ⁴²	14.828 ²³	23.54 ¹⁷⁷
Mar. 1.5	38.733 ⁹¹	26.05 ¹⁸¹	10.982 ⁷⁰	44.54 ²¹	14.851 ⁶³	21.77 ¹⁶⁰
11.5	38.824 ¹²⁹	24.24 ¹⁹⁸	11.052 ¹⁰⁵	44.33 ⁴	14.914 ¹⁰⁴	20.17 ¹³⁵
21.5	38.953 ¹⁶⁸	22.26 ²¹²	11.157 ¹⁴⁰	44.37 ³¹	15.018 ¹⁴⁷	18.82 ¹⁰⁴
31.4	39.121 ²⁰⁶	20.14 ²²¹	11.297 ¹⁷⁸	44.68 ⁶⁰	15.165 ¹⁸⁸	17.78 ⁶⁷
Apr. 10.4	39.327 ²⁴³	17.93 ²²⁸	11.475 ²¹²	45.28 ⁸⁹	15.353 ²²⁹	17.11 ²⁷
20.4	39.570 ²⁷⁶	15.65 ²³⁰	11.687 ²⁴⁴	46.17 ¹¹⁷	15.582 ²⁶⁴	16.84 ¹⁶
30.4	39.846 ³⁰⁷	13.35 ²²⁵	11.931 ²⁷²	47.34 ¹⁴²	15.846 ²⁹⁴	17.00 ⁵⁹
May 10.3	40.153 ³³²	11.10 ²¹⁷	12.203 ²⁹⁴	48.76 ¹⁶⁴	16.140 ³¹⁷	17.59 ¹⁰¹
20.3	40.485 ³⁴⁸	08.93 ²⁰³	12.497 ³⁰⁹	50.40 ¹⁸⁴	16.457 ³³³	18.60 ¹⁴⁰
30.3	40.833 ³⁵⁸	06.90 ¹⁸⁴	12.806 ³¹⁷	52.24 ¹⁹⁷	16.790 ³³⁹	20.00 ¹⁷⁶
June 9.2	41.191 ³⁵⁸	05.06 ¹⁶⁰	13.123 ³¹⁷	54.21 ²⁰⁵	17.129 ³³⁵	21.76 ²⁰⁶
19.2	41.549 ³⁵⁰	03.46 ¹³²	13.440 ³⁰⁸	56.26 ²⁰⁸	17.464 ³²⁶	23.82 ²³¹
29.2	41.899 ³³³	02.14 ¹⁰¹	13.748 ²⁹³	58.34 ²⁰⁶	17.790 ³⁰⁷	26.13 ²⁵¹
July 9.2	42.232 ³⁰⁷	01.13 ⁶⁸	14.041 ²⁶⁹	60.40 ¹⁹⁸	18.097 ²⁷⁹	28.64 ²⁶³
19.1	42.539 ²⁷⁴	00.45 ³³	14.310 ²³⁹	62.38 ¹⁸⁵	18.376 ²⁴⁶	31.27 ²⁷¹
29.1	42.813 ²³⁴	00.12 ²	14.549 ²⁰⁴	64.23 ¹⁷⁰	18.622 ²⁰⁷	33.98 ²⁷⁰
Aug. 8.1	43.047 ¹⁸⁹	00.14 ³⁴	14.753 ¹⁶⁵	65.93 ¹⁵¹	18.829 ¹⁶⁵	36.68 ²⁶⁵
18.1	43.236 ¹⁴²	00.48 ⁶⁵	14.918 ¹²⁵	67.44 ¹²⁹	18.994 ¹²¹	39.33 ²⁵⁴
28.0	43.378 ⁹³	01.13 ⁹²	15.043 ⁸³	68.73 ¹⁰⁷	19.115 ⁷⁷	41.87 ²⁴⁰
Sept. 7.0	43.471 ⁴⁴	02.05 ¹¹⁴	15.126 ⁴⁴	69.80 ⁸⁴	19.192 ³⁴	44.27 ²²⁰
17.0	43.515 ¹	03.19 ¹²⁹	15.170 ⁴	70.64 ⁶⁰	19.226 ⁶	46.47 ¹⁹⁷
26.9	43.514 ⁴²	04.48 ¹³⁹	15.174 ²⁷	71.24 ³⁸	19.220 ⁴³	48.44 ¹⁷¹
Oct. 6.9	43.472 ⁷⁷	05.87 ¹⁴¹	15.147 ⁵⁶	71.62 ¹⁷	19.177 ⁷⁴	50.15 ¹⁴³
16.9	43.395 ¹⁰⁵	07.28 ¹³⁷	15.091 ⁷⁹	71.79 ¹	19.103 ⁹⁹	51.58 ¹¹²
26.9	43.290 ¹²⁵	08.65 ¹²⁷	15.012 ⁹⁶	71.78 ¹⁸	19.004 ¹¹⁹	52.70 ⁷⁹
Nov. 5.8	43.165 ¹³⁸	09.92 ¹¹⁰	14.916 ¹⁰⁶	71.60 ³⁵	18.885 ¹³³	53.49 ⁴⁶
15.8	43.027 ¹⁴²	11.02 ⁹⁰	14.810 ¹¹²	71.25 ⁴⁸	18.752 ¹⁴¹	53.95 ¹¹
25.8	42.885 ¹⁴⁰	11.92 ⁶⁵	14.698 ¹¹²	70.77 ⁵⁹	18.611 ¹⁴³	54.06 ²⁴
Dec. 5.8	42.745 ¹³¹	12.57 ³⁸	14.586 ¹⁰⁸	70.18 ⁶⁹	18.468 ¹⁴¹	53.82 ⁵⁸
15.7	42.614 ¹¹⁸	12.95 ¹⁰	14.478 ⁹⁸	69.49 ⁷⁵	18.327 ¹³⁴	53.24 ⁹⁰
25.7	42.496 ⁹⁹	13.05 ¹⁸	14.380 ⁸⁷	68.74 ⁸¹	18.193 ¹²³	52.34 ¹²⁰
35.7	42.397	12.87	14.293	67.93	18.070	51.14
Mean Place	40.556	15.01	12.700	55.68	16.793	31.22
Sec δ , Tan δ	1.155	-0.577	1.002	+0.060	1.129	+0.525
L u , L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω u , ω δ	+0.04	-0.3	0.00	-0.3	-0.03	-0.3
Authority and Catalogue No.	A. E.	1431		1436	A. E.	1437

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	α Pegasi.		ϵ^2 Aquarii.		γ Tucanæ.	
	2.57	A o	3.80	K o	4.10	F 2
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 23 01 ^m	[°] 14 48'	^h 23 05 ^m	[°] 21 33'	^h 23 13 ^m	[°] 58 37'
Jan. 1.7	08.757 ^s	60.01 ^s	35.044 ^s	63.34 ^s	12.436 ^s	73.96 ^s
11.7	08.665 ⁹²	58.88 ¹¹³	34.957 ⁸⁷	63.35 ¹	12.205 ²³¹	72.67 ¹²⁹
21.6	08.590 ⁷⁵	57.64 ¹²⁴	34.889 ⁶⁸	63.14 ²¹	12.014 ¹⁹¹	70.91 ¹⁷⁶
31.6	08.536 ⁵⁴	56.35 ¹²⁹	34.844 ⁴⁵	62.70 ⁴⁴	11.869 ¹⁴⁵	68.73 ²¹⁸
Feb. 10.6	08.506 ³⁰	55.07 ¹²⁸	34.823 ²¹	62.02 ⁶⁸	11.775 ⁹⁴	66.19 ²⁵⁴
20.5	08.505 ¹	53.86 ¹²¹	34.831 ⁸	61.12 ⁹⁰	11.735 ⁴⁰	63.37 ²⁸²
Mar. 1.5	08.536 ³¹	52.78 ¹⁰⁸	34.870 ³⁹	60.00 ¹¹²	11.754 ¹⁹	60.32 ³⁰⁵
11.5	08.601 ⁶⁵	51.89 ⁸⁹	34.943 ⁷³	58.65 ¹³⁵	11.833 ⁷⁹	57.11 ³²¹
21.5	08.704 ¹⁰³	51.25 ⁶⁴	35.051 ¹⁰⁸	57.11 ¹⁵⁴	11.975 ¹⁴²	53.79 ³³²
31.4	08.844 ¹⁴⁰	50.90 ³⁵	35.196 ¹⁴⁵	55.39 ¹⁷²	12.180 ²⁰⁵	50.46 ³³³
Apr. 10.4	09.023 ¹⁷⁹	50.89 ¹	35.379 ¹⁸³	53.50 ¹⁸⁹	12.446 ²⁶⁶	47.18 ³²⁸
20.4	09.238 ²¹⁵	51.23 ³⁴	35.598 ²¹⁹	51.49 ²⁰¹	12.771 ³²⁵	44.01 ³¹⁷
30.4	09.486 ²⁴⁸	51.92 ⁶⁹	35.851 ²⁵³	49.38 ²¹¹	13.152 ³⁸¹	41.02 ²⁹⁹
May 10.3	09.763 ²⁷⁷	52.95 ¹⁰³	36.134 ²⁸³	47.22 ²¹⁶	13.581 ⁴²⁹	38.28 ²⁷⁴
20.3	10.062 ²⁹⁹	54.31 ¹³⁶	36.442 ³⁰⁸	45.07 ²¹⁵	14.051 ⁴⁷⁰	35.84 ²⁴⁴
30.3	10.376 ³¹⁴	55.96 ¹⁶⁵	36.768 ³²⁶	42.98 ²⁰⁹	14.553 ⁵⁰²	33.76 ²⁰⁸
June 9.2	10.697 ³²¹	57.85 ¹⁸⁹	37.105 ³³⁷	41.00 ¹⁹⁸	15.075 ⁵²²	32.09 ¹⁶⁷
19.2	11.018 ³²¹	59.94 ²⁰⁹	37.444 ³³⁹	39.17 ¹⁸³	15.604 ⁵²⁹	30.87 ¹²²
29.2	11.330 ³¹²	62.15 ²²¹	37.777 ³³³	37.55 ¹⁶²	16.128 ⁵²⁴	30.13 ⁷⁴
July 9.2	11.625 ²⁹⁵	64.45 ²³⁰	38.095 ³¹⁸	36.18 ¹³⁷	16.632 ⁵⁰⁴	29.88 ²⁵
19.1	11.895 ²⁷⁰	66.78 ²³³	38.390 ²⁹⁵	35.08 ¹¹⁰	17.105 ⁴⁷³	30.13 ²⁵
29.1	12.135 ²⁴⁰	69.07 ²²⁹	38.656 ²⁶⁶	34.29 ⁷⁹	17.533 ⁴²⁸	30.87 ⁷⁴
Aug. 8.1	12.339 ²⁰⁴	71.27 ²²⁰	38.885 ²²⁹	33.81 ⁴⁸	17.905 ³⁷²	32.07 ¹²⁰
18.1	12.503 ¹⁶⁴	73.35 ²⁰⁸	39.074 ¹⁸⁹	33.64 ¹⁷	18.212 ³⁰⁷	33.67 ¹⁶⁰
28.0	12.626 ¹²³	75.26 ¹⁹¹	39.219 ¹⁴⁵	33.77 ¹³	18.445 ²³³	35.63 ¹⁹⁶
Sept. 7.0	12.707 ⁸¹	76.98 ¹⁷²	39.318 ⁹⁹	34.18 ⁴¹	18.600 ¹⁵⁵	37.87 ²²⁴
17.0	12.747 ⁴⁰	78.48 ¹⁵⁰	39.373 ⁵⁵	34.83 ⁶⁵	18.677 ⁷⁷	40.31 ²⁴⁴
26.9	12.750 ³	79.74 ¹²⁶	39.387 ¹⁴	35.68 ⁸⁵	18.675 ²	42.83 ²⁵²
Oct. 6.9	12.718 ³²	80.76 ¹⁰²	39.362 ²⁵	36.68 ¹⁰⁰	18.599 ⁷⁶	45.35 ²⁵²
16.9	12.658 ⁶⁰	81.53 ⁷⁷	39.304 ⁵⁸	37.76 ¹⁰⁸	18.458 ¹⁴¹	47.76 ²⁴¹
26.9	12.575 ⁸³	82.04 ⁵¹	39.219 ⁸⁵	38.87 ¹¹¹	18.259 ¹⁹⁹	49.96 ²²⁰
Nov. 5.8	12.474 ¹⁰¹	82.32 ²⁸	39.114 ¹⁰⁵	39.95 ¹⁰⁸	18.016 ²⁴³	51.85 ¹⁸⁹
15.8	12.361 ¹¹³	82.34 ²	38.997 ¹¹⁷	40.97 ¹⁰²	17.740 ²⁷⁶	53.35 ¹⁵⁰
25.8	12.241 ¹²⁰	82.12 ²²	38.874 ¹²³	41.86 ⁸⁹	17.445 ²⁹⁵	54.41 ¹⁰⁶
Dec. 5.8	12.121 ¹²⁰	81.67 ⁴⁵	38.750 ¹²⁴	42.59 ⁷³	17.144 ³⁰¹	54.97 ⁵⁶
15.7	12.004 ¹¹⁷	81.00 ⁶⁷	38.631 ¹¹⁹	43.15 ⁵⁶	16.849 ²⁹⁵	55.00 ³
25.7	11.894 ¹¹⁰	80.14 ⁸⁶	38.523 ¹⁰⁸	43.50 ³⁵	16.571 ²⁷⁸	54.50 ⁵⁰
35.7	11.795 ⁹⁹	79.12 ¹⁰²	38.428 ⁹⁵	43.62 ¹²	16.321 ²⁵⁰	53.49 ¹⁰¹
Mean Place	10.322	63.27	36.609	48.44	14.347	50.28
Sec δ , Tan δ	1.034	+0.265	1.075	-0.395	1.921	-1.640
L α , L δ	0.00	+0.4	0.00	+0.4	+0.01	+0.4
ω α , ω δ	-0.02	-0.3	+0.03	-0.2	+0.11	-0.2
Authority and Catalogue No.	A. E.	1438	A. E.	1444	A. E.	1452

APPARENT PLACES OF STARS, 1928. 425

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Piscium.		η^3 Aquarii.		τ Pegasi	
	3.85	K o	5.16	A o	4.65	A 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 23 ^m 13	[°] 2 53	^h 23 ^m 15	[°] 10 00	^h 23 ^m 17	[°] 23 20
Jan. 1.7	24.436 ^s 85	12.22 79	11.515 ^s 86	27.49 43	02.664 ^s 114	45.55 121
11.7	24.351 70	11.43 79	11.429 69	27.92 29	02.550 98	44.34 139
21.6	24.281 52	10.64 74	11.360 51	28.21 14	02.452 79	42.95 152
31.6	24.229 30	09.90 65	11.309 29	28.35 3	02.373 54	41.43 159
Feb. 10.6	24.199 4	09.25 52	11.280 3	28.32 21	02.319 25	39.84 159
20.6	24.195 26	08.73 36	11.277 26	28.11 43	02.294 8	38.25 150
Mar. 1.5	24.221 57	08.37 16	11.303 58	27.68 64	02.302 46	36.75 135
11.5	24.278 93	08.21 8	11.361 93	27.04 87	02.348 86	35.40 112
21.5	24.371 130	08.29 35	11.454 129	26.17 111	02.434 127	34.28 84
31.4	24.501 167	08.64 63	11.583 166	25.06 132	02.561 169	33.44 50
Apr. 10.4	24.668 202	09.27 91	11.749 203	23.74 154	02.730 209	32.94 12
20.4	24.870 236	10.18 118	11.952 236	22.20 171	02.939 245	32.82 27
30.4	25.106 266	11.36 143	12.188 266	20.49 187	03.184 278	33.09 66
May 10.3	25.372 290	12.79 166	12.454 291	18.62 197	03.462 304	33.75 105
20.3	25.662 307	14.45 184	12.745 310	16.65 204	03.766 321	34.80 140
30.3	25.969 317	16.29 197	13.055 321	14.61 203	04.087 331	36.20 174
June 9.3	26.286 319	18.26 206	13.376 323	12.58 199	04.418 333	37.94 200
19.2	26.605 314	20.32 207	13.699 320	10.59 190	04.751 325	39.94 222
29.2	26.919 299	22.39 205	14.019 305	08.69 174	05.076 309	42.16 238
July 9.2	27.218 277	24.44 198	14.324 285	06.95 156	05.385 286	44.54 249
19.1	27.495 250	26.42 185	14.609 257	05.39 134	05.671 254	47.03 253
29.1	27.745 216	28.27 169	14.866 224	04.05 109	05.925 220	49.56 252
Aug. 8.1	27.961 179	29.96 150	15.090 185	02.96 82	06.145 181	52.08 245
18.1	28.140 139	31.46 128	15.275 146	02.14 55	06.326 139	54.53 234
28.0	28.279 99	32.74 105	15.421 103	01.59 30	06.465 96	56.87 218
Sept. 7.0	28.378 58	33.79 82	15.524 62	01.29 3	06.561 55	59.05 199
17.0	28.436 20	34.61 58	15.586 23	01.26 18	06.616 16	61.04 177
27.0	28.456 13	35.19 37	15.609 13	01.44 38	06.632 21	62.81 153
Oct. 6.9	28.443 43	35.56 15	15.596 43	01.82 53	06.611 52	64.34 125
16.9	28.400 67	35.71 4	15.553 68	02.35 64	06.559 77	65.59 98
26.9	28.333 84	35.67 20	15.485 88	02.99 72	06.482 99	66.57 69
Nov. 5.8	28.249 98	35.47 35	15.397 101	03.71 75	06.383 114	67.26 39
15.8	28.151 105	35.12 47	15.296 109	04.46 75	06.269 124	67.65 9
25.8	28.046 108	34.65 58	15.187 110	05.21 72	06.145 129	67.74 22
Dec. 5.8	27.938 105	34.07 67	15.077 108	05.93 66	06.016 130	67.52 51
15.7	27.833 100	33.40 73	14.969 102	06.59 58	05.886 126	67.01 79
25.7	27.733 90	32.67 76	14.867 91	07.17 48	05.760 118	66.22 104
35.7	27.643	31.91	14.776	07.65	05.642	65.18
Mean Place	25.918	19.34	12.990	16.12	04.175	45.90
Sec δ , Tan δ	1.001	+0.050	1.015	-0.176	1.089	+0.432
L a , L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ωa , $\omega \delta$	0.00	-0.2	+0.01	-0.2	-0.03	-0.2
Authority and Catalogue No.	A. N.	1453		1455	A. E.	1457

(12961)

(NAUTICAL ALMANAC, 1928).

2 F

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	♈ Piscium.		♏ Phœnicis.		♐ Piscium.	
	4·94	A 2 p	4·80	A 2 p	4·28	F 8
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 23 ^m 23	[°] 0 ['] 51	^h 23 ^m 31	[°] 43 ['] 00	^h 23 ^m 36	[°] 5 ['] 13
Jan. 1·7	13·007 ^s 89	32·91 ["] 72	11·034 ^s 151	68·86 ["] 60	13·366 ^s 97	63·33 ["] 81
11·7	12·918 77	32·19 70	10·883 129	68·26 100	13·269 85	62·52 82
21·6	12·841 59	31·49 63	10·754 103	67·26 138	13·184 70	61·70 79
31·6	12·782 38	30·86 53	10·651 72	65·88 173	13·114 51	60·91 73
Feb. 10·6	12·744 13	30·33 40	10·579 35	64·15 205	13·063 27	60·18 63
20·6	12·731 15	29·93 23	10·544 2	62·10 231	13·036 1	59·55 47
Mar. 1·5	12·746 47	29·70 3	10·546 43	59·79 254	13·037 33	59·08 29
11·5	12·793 82	29·67 21	10·589 89	57·25 271	13·070 69	58·79 6
21·5	12·875 119	29·88 47	10·678 135	54·54 283	13·139 106	58·73 20
31·5	12·994 156	30·35 74	10·813 182	51·71 290	13·245 145	58·93 47
Apr. 10·4	13·150 193	31·09 100	10·995 229	48·81 292	13·390 183	59·40 76
20·4	13·343 228	32·09 126	11·224 273	45·89 286	13·573 220	60·16 105
30·4	13·571 259	33·35 151	11·497 313	43·03 274	13·793 252	61·21 132
May 10·3	13·830 284	34·86 170	11·810 348	40·29 258	14·045 279	62·53 155
20·3	14·114 303	36·56 187	12·158 376	37·71 234	14·324 301	64·08 176
30·3	14·417 315	38·43 198	12·534 394	35·37 205	14·625 314	65·84 194
June 9·3	14·732 319	40·41 205	12·928 404	33·32 172	14·939 320	67·78 203
19·2	15·051 315	42·46 206	13·332 402	31·60 134	15·259 317	69·81 208
29·2	15·366 302	44·52 202	13·734 392	30·26 91	15·576 306	71·89 209
July 9·2	15·668 283	46·54 192	14·126 370	29·35 49	15·882 289	73·98 205
19·2	15·951 256	48·46 179	14·496 340	28·86 4	16·171 263	76·03 194
29·1	16·207 223	50·25 161	14·836 300	28·82 40	16·434 233	77·97 180
Aug. 8·1	16·430 187	51·86 140	15·136 254	29·22 80	16·667 197	79·77 162
18·1	16·617 148	53·26 118	15·390 203	30·02 118	16·864 159	81·39 142
28·0	16·765 107	54·44 94	15·593 149	31·20 151	17·023 119	82·81 120
Sept 7·0	16·872 67	55·38 70	15·742 92	32·71 176	17·142 80	84·01 96
17·0	16·939 30	56·08 48	15·834 36	34·47 195	17·222 43	84·97 73
27·0	16·969 5	56·56 24	15·870 15	36·42 205	17·265 7	85·70 50
Oct. 6·9	16·964 35	56·80 4	15·855 61	38·47 206	17·272 23	86·20 28
16·9	16·929 60	56·84 13	15·794 103	40·53 197	17·249 49	86·48 8
26·9	16·869 80	56·71 29	15·691 134	42·50 182	17·200 70	86·56 10
Nov. 5·9	16·789 94	56·42 42	15·557 158	44·32 156	17·130 86	86·46 26
15·8	16·695 103	56·00 52	15·399 173	45·88 126	17·044 97	86·20 41
25·8	16·592 106	55·48 61	15·226 182	47·14 88	16·947 103	85·79 52
Dec. 5·8	16·486 106	54·87 66	15·044 180	48·02 50	16·844 105	85·27 63
15·7	16·380 102	54·21 70	14·864 174	48·52 7	16·739 104	84·64 71
25·7	16·278 93	53·51 72	14·690 160	48·59 35	16·635 99	83·93 77
35·7	16·185	52·79	14·530	48·24	16·536	83·16
Mean Place	14·435	40·69	12·513	47·84	14·726	69·56
Sec δ, Tan δ	1·000	+0·015	1·368	-0·933	1·004	+0·092
L α, L δ	0·00	+0·4	0·00	+0·4	0·00	+0·4
ω α, ω δ	0·00	-0·2	+0·06	-0·1	-0·01	-0·1
Authority and Catalogue No.	A. E.	1464		1474	A. E.	1479

APPARENT PLACES OF STARS, 1928.

427

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect.	γ Cephei.		λ Piscium.		δ Sculptoris.	
	3.42	Ko	4.61	A 5	4.64	A c
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ₂₃ ^m ₃₆	[°] ₇₇ ['] ₁₃	^h ₂₃ ^m ₃₈	[°] ₁ ['] ₂₂	^h ₂₃ ^m ₄₅	[°] ₂₈ ['] ₃₁
Jan. 1.7	^s _{19.58}	_{61.86}	^s _{20.949}	_{54.11}	^s _{09.399}	_{59.56}
11.7	_{18.68}	_{61.02}	_{20.852}	_{53.39}	_{09.280}	_{59.53}
21.7	_{17.84}	_{59.59}	_{20.766}	_{52.70}	_{09.176}	_{59.18}
31.6	_{17.09}	_{57.63}	_{20.695}	_{52.07}	_{09.090}	_{58.51}
Feb. 10.6	_{16.47}	_{55.21}	_{20.644}	_{51.53}	_{09.026}	_{57.54}
20.6	_{15.99}	_{52.45}	_{20.616}	_{51.12}	_{08.988}	_{56.29}
Mar. 1.5	_{15.67}	_{49.45}	_{20.614}	_{50.88}	_{08.980}	_{54.77}
11.5	_{15.54}	_{46.35}	_{20.646}	_{50.84}	_{09.007}	_{53.01}
21.5	_{15.59}	_{43.26}	_{20.712}	_{51.02}	_{09.071}	_{51.03}
31.5	_{15.83}	_{40.32}	_{20.815}	_{51.47}	_{09.176}	_{48.86}
Apr. 10.4	_{16.24}	_{37.63}	_{20.957}	_{52.17}	_{09.322}	_{46.54}
20.4	_{16.82}	_{35.30}	_{21.137}	_{53.15}	_{09.510}	_{44.11}
30.4	_{17.54}	_{33.42}	_{21.353}	_{54.39}	_{09.737}	_{41.61}
May 10.4	_{18.38}	_{32.06}	_{21.603}	_{55.87}	_{10.001}	_{39.09}
20.3	_{19.32}	_{31.24}	_{21.879}	_{57.55}	_{10.297}	_{36.62}
30.3	_{20.31}	_{31.00}	_{22.177}	_{59.42}	_{10.619}	_{34.26}
June 9.3	_{21.33}	_{31.35}	_{22.490}	_{61.39}	_{10.959}	_{32.05}
19.2	_{22.35}	_{32.27}	_{22.808}	_{63.44}	_{11.310}	_{30.04}
29.2	_{23.34}	_{33.74}	_{23.125}	_{65.51}	_{11.661}	_{28.30}
July 9.2	_{24.28}	_{35.72}	_{23.431}	_{67.55}	_{12.005}	_{26.87}
19.2	_{25.13}	_{38.16}	_{23.720}	_{69.50}	_{12.332}	_{25.78}
29.1	_{25.89}	_{41.00}	_{23.984}	_{71.32}	_{12.635}	_{25.05}
Aug. 8.1	_{26.53}	_{44.18}	_{24.218}	_{72.96}	_{12.906}	_{24.70}
18.1	_{27.05}	_{47.63}	_{24.416}	_{74.40}	_{13.139}	_{24.73}
28.1	_{27.42}	_{51.28}	_{24.577}	_{75.63}	_{13.329}	_{25.12}
Sept. 7.0	_{27.65}	_{55.06}	_{24.698}	_{76.61}	_{13.474}	_{25.83}
17.0	_{27.74}	_{58.88}	_{24.780}	_{77.35}	_{13.573}	_{26.84}
27.0	_{27.67}	_{62.66}	_{24.825}	_{77.86}	_{13.627}	_{28.08}
Oct. 6.9	_{27.46}	_{66.34}	_{24.834}	_{78.14}	_{13.639}	_{29.49}
16.9	_{27.12}	_{69.83}	_{24.813}	_{78.21}	_{13.613}	_{31.00}
26.9	_{26.65}	_{73.05}	_{24.765}	_{78.10}	_{13.554}	_{32.54}
Nov. 5.9	_{26.06}	_{75.92}	_{24.697}	_{77.84}	_{13.468}	_{34.04}
15.8	_{25.36}	_{78.37}	_{24.612}	_{77.44}	_{13.361}	_{35.43}
25.8	_{24.57}	_{80.33}	_{24.516}	_{76.93}	_{13.239}	_{36.64}
Dec. 5.8	_{23.71}	_{81.74}	_{24.413}	_{76.34}	_{13.110}	_{37.63}
15.8	_{22.80}	_{82.56}	_{24.308}	_{75.68}	_{12.978}	_{38.37}
25.7	_{21.88}	_{82.76}	_{24.204}	_{74.99}	_{12.848}	_{38.81}
35.7	_{20.97}	_{82.33}	_{24.106}	_{74.28}	_{12.725}	_{38.94}
Mean Place	22.437	49.55	22.289	61.65	10.702	42.24
Sec δ , Tan δ	4.524	+4.412	1.000	+0.024	1.138	-0.544
L a , L δ	-0.01	+0.4	0.00	+0.4	0.00	+0.4
ω a , ω δ	-0.29	-0.1	0.00	-0.1	+0.04	-0.1
Authority and Catalogue No.	A. E.	1480		1482	A. E.	1488

APPARENT PLACES OF STARS, 1928.

AT UPPER TRANSIT AT GREENWICH.

Name. Mag. Spect	α Pegasi.		27 Piscium.		ω Piscium.	
	5.23	Ma	5.07	Ko	4.03	F 5
Mean Solar Date.	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 23 ^m 48	[°] 18 ['] 43	^h 23 ^m 54	[°] 3 ['] 57	^h 23 ^m 55	[°] 6 ['] 27
Jan. 1.7	47.975 ^s	12.23 ["]	57.954 ^s	28.81 ["]	35.471 ^s	47.43 ["]
11.7	47.859 ¹¹⁶	11.28 ⁹⁵	57.854 ¹⁰⁰	29.40 ⁵⁹	35.368 ¹⁰³	46.65 ⁷⁸
21.7	47.752 ¹⁰⁷	10.18 ¹¹⁰	57.761 ⁹³	29.91 ⁵¹	35.272 ⁹⁶	45.86 ⁷⁹
31.6	47.659 ⁹³	08.97 ¹²¹	57.682 ⁷⁹	30.31 ⁴⁰	35.188 ⁸⁴	45.07 ⁷⁹
Feb. 10.6	47.585 ⁷⁴	07.71 ¹²⁶	57.619 ⁶³	30.57 ²⁶	35.121 ⁶⁷	44.34 ⁷³
20.6	47.536 ⁴⁹	06.45 ¹²⁶	57.578 ⁴¹	30.67 ¹⁰	35.076 ⁴⁵	43.70 ⁶⁴
Mar. 1.6	47.516 ²⁰	05.27 ¹¹⁸	57.563 ¹⁵	30.58 ⁹	35.058 ¹⁸	43.19 ⁵¹
11.5	47.530 ¹⁴	04.22 ¹⁰⁵	57.578 ¹⁵	30.28 ³⁰	35.071 ¹³	42.86 ³³
21.5	47.583 ⁵³	03.38 ⁸⁴	57.629 ⁵¹	29.75 ⁵³	35.119 ⁴⁸	42.75 ¹¹
31.5	47.676 ⁹³	02.78 ⁶⁰	57.716 ⁸⁷	28.98 ⁷⁷	35.205 ⁸⁶	42.88 ¹³
Apr. 10.4	47.812 ¹³⁶	02.48 ³⁰	57.842 ¹²⁶	27.96 ¹⁰²	35.331 ¹²⁶	43.29 ⁴¹
20.4	47.990 ¹⁷⁸	02.51 ³	58.007 ¹⁶⁵	26.70 ¹²⁶	35.497 ¹⁶⁶	43.98 ⁶⁹
30.4	48.207 ²¹⁷	02.89 ³⁸	58.210 ²⁰³	25.21 ¹⁴⁹	35.702 ²⁰⁵	44.95 ⁹⁷
May 10.4	48.459 ²⁵²	03.61 ⁷²	58.448 ²³⁸	23.53 ¹⁶⁸	35.941 ²³⁹	46.20 ¹²⁵
20.3	48.741 ²⁸²	04.68 ¹⁰⁷	58.715 ²⁶⁷	21.67 ¹⁸⁶	36.210 ²⁶⁹	47.70 ¹⁵⁰
30.3	49.047 ³⁰⁶	06.06 ¹³⁸	59.007 ²⁹²	19.69 ¹⁹⁸	36.504 ²⁹⁴	49.41 ¹⁷¹
June 9.3	49.368 ³²¹	07.74 ¹⁶⁸	59.316 ³⁰⁹	17.63 ²⁰⁶	36.814 ³¹⁰	51.30 ¹⁸⁹
19.3	49.696 ³²⁸	09.65 ¹⁹¹	59.634 ³¹⁸	15.55 ²⁰⁸	37.132 ³¹⁸	53.31 ²⁰¹
29.2	50.023 ³²⁷	11.74 ²⁰⁹	59.953 ³¹⁹	13.50 ²⁰⁵	37.452 ³²⁰	55.39 ²⁰⁸
July 9.2	50.340 ³¹⁷	13.96 ²²²	60.265 ³¹²	11.53 ¹⁹⁷	37.764 ³¹²	57.50 ²¹¹
19.2	50.639 ²⁹⁹	16.27 ²³¹	60.563 ²⁹⁸	09.69 ¹⁸⁴	38.060 ²⁹⁶	59.57 ²⁰⁷
29.1	50.914 ²⁷⁵	18.60 ²³³	60.838 ²⁷⁵	08.03 ¹⁶⁶	38.334 ²⁷⁴	61.56 ¹⁹⁹
Aug. 8.1	51.158 ²⁴⁴	20.91 ²³¹	61.085 ²⁴⁷	06.57 ¹⁴⁶	38.580 ²⁴⁶	63.43 ¹⁸⁷
18.1	51.367 ²⁰⁹	23.13 ²²²	61.299 ²¹⁴	05.35 ¹²²	38.792 ²¹²	65.12 ¹⁶⁹
28.1	51.537 ¹⁷⁰	25.23 ²¹⁰	61.476 ¹⁷⁷	04.39 ⁹⁶	38.968 ¹⁷⁶	66.63 ¹⁵¹
Sept. 7.0	51.667 ¹³⁰	27.17 ¹⁹⁴	61.615 ¹³⁹	03.70 ⁶⁹	39.106 ¹³⁸	67.91 ¹²⁸
17.0	51.758 ⁹¹	28.93 ¹⁷⁶	61.715 ¹⁰⁰	03.26 ⁴⁴	39.205 ⁹⁹	68.96 ¹⁰⁵
27.0	51.811 ⁵³	30.47 ¹⁵⁴	61.777 ⁶²	03.06 ²⁰	39.267 ⁶²	69.78 ⁸²
Oct. 7.0	51.828 ¹⁷	31.79 ¹³²	61.804 ²⁷	03.10 ⁴	39.293 ²⁶	70.38 ⁶⁰
16.9	51.812 ¹⁶	32.86 ¹⁰⁷	61.798 ⁶	03.33 ²³	39.289 ⁴	70.75 ³⁷
26.9	51.769 ⁴³	33.69 ⁸³	61.765 ³³	03.72 ³⁹	39.256 ³³	70.91 ¹⁶
Nov. 5.9	51.702 ⁶⁷	34.27 ⁵⁸	61.709 ⁵⁶	04.24 ⁵²	39.201 ⁵⁵	70.89 ²
15.8	51.616 ⁸⁶	34.60 ³³	61.634 ⁷⁵	04.85 ⁶¹	39.127 ⁷⁴	70.71 ¹⁸
25.8	51.516 ¹⁰⁰	34.68 ⁸	61.545 ⁸⁹	05.52 ⁶⁷	39.040 ⁸⁷	70.37 ³⁴
Dec. 5.8	51.406 ¹¹⁰	34.51 ¹⁷	61.448 ⁹⁷	06.22 ⁷⁰	38.943 ⁹⁷	69.90 ⁴⁷
15.8	51.290 ¹¹⁶	34.11 ⁴⁰	61.346 ¹⁰²	06.92 ⁷⁰	38.839 ¹⁰⁴	69.32 ⁵⁸
25.7	51.172 ¹¹⁸	33.49 ⁶²	61.242 ¹⁰⁴	07.60 ⁶⁸	38.734 ¹⁰⁵	68.66 ⁶⁶
35.7	51.056 ¹¹⁶	32.66 ⁸³	61.140 ¹⁰²	08.22 ⁶²	38.631 ¹⁰³	67.93 ⁷³
Mean Place	49.298	13.72	59.193	19.49	36.725	53.09
Sec δ , Tan δ	1.056	+0.339	1.002	-0.069	1.006	+0.113
L α , L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω α , ω δ	-0.02	-0.1	0.00	0.0	-0.01	0.0
Authority and Catalogue No.	A. E.	1491	A. N.	1498	A. E.	1500

MOON, 1928.
AT TRANSIT AT GREENWICH.

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Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^g Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	s	° ' "	"	' "	' "
Jan. 0	I. L.	—	00 27 23.05	131.25	66.62	S. 2 23 44.8	+912.8	16 03.20	58 55.10
	I. U.	7.6	00 53 41.37	131.93	66.86	N. 0 39 58.8	+922.5	16 06.41	59 06.87
1	I. L.	—	01 20 12.26	133.35	67.16	N. 3 44 25.2	+919.8	16 09.36	59 17.69
	I. U.	8.6	01 47 04.72	135.52	67.72	6 47 01.7	+904.0	16 11.98	59 27.31
2	I. L.	—	02 14 27.48	138.39	68.44	N. 9 45 05.7	+874.3	16 14.19	59 35.43
	I. U.	9.7	02 42 28.43	141.87	69.29	12 35 45.0	+829.7	16 15.91	59 41.75
3	I. L.	—	03 11 14.06	145.81	70.26	N. 15 15 57.1	+769.6	16 17.05	59 45.93
	I. U.	10.7	03 40 48.71	149.99	71.26	17 42 33.1	+693.6	16 17.52	59 47.66
4	I. L.	—	04 11 13.68	154.14	72.25	N. 19 52 22.5	+602.0	16 17.26	59 46.69
	I. U.	11.7	04 42 26.46	157.90	73.12	21 42 22.5	+495.7	16 16.20	59 42.79
5	I. L.	—	05 14 30.21	160.90	73.81	N. 23 09 49.0	+376.9	16 14.30	59 35.84
	I. U.	12.8	05 46 43.66	162.79	74.23	24 12 30.8	+248.8	16 11.57	59 25.82
6	I. L.	—	06 19 21.72	163.30	74.33	N. 24 49 01.1	+115.7	16 08.03	59 12.81
	I. U.	13.8	06 51 56.88	162.30	74.07	24 58 47.4	— 17.6	16 03.72	58 57.01
7	II. L.	—	07 26 38.07	159.71	73.48	N. 24 42 15.1	—146.6	15 58.74	58 38.73
8	II. U.	14.9	07 58 13.04	155.93	72.59	N. 24 00 43.1	—267.0	15 53.20	58 18.38
	II. L.	—	08 28 56.66	151.21	71.45	22 56 13.7	—375.7	15 47.21	57 56.41
9	II. U.	15.9	08 58 39.82	145.91	70.17	N. 21 31 19.8	—470.8	15 40.93	57 33.35
	II. L.	—	09 27 17.68	140.39	68.80	19 48 50.3	—551.6	15 34.49	57 09.72
10	II. U.	16.9	09 54 49.45	134.95	67.44	N. 17 51 36.8	—618.3	15 28.05	56 46.05
	II. L.	—	10 21 17.54	129.81	66.14	15 42 24.5	—671.6	15 21.72	56 22.83
11	II. U.	18.0	10 46 46.82	125.16	64.94	N. 13 23 46.4	—712.8	15 15.65	56 00.54
	II. L.	—	11 11 23.81	121.11	63.87	10 57 59.6	—743.3	15 09.94	55 39.59
12	II. U.	19.0	11 35 16.07	117.71	62.97	N. 8 27 05.2	—764.3	15 04.70	55 20.35
	II. L.	—	11 58 31.74	115.02	62.25	5 52 49.0	—777.1	15 00.00	55 03.13
13	II. U.	20.0	12 21 19.20	113.02	61.71	N. 3 16 43.8	—785.6	14 55.94	54 48.20
	II. L.	—	12 43 46.88	111.72	61.36	N. 0 40 11.6	—781.7	14 52.55	54 35.75
14	II. U.	21.1	13 06 03.17	111.11	61.19	S. 1 55 33.5	—774.9	14 49.87	54 25.94
	II. L.	—	13 28 16.28	111.18	61.21	4 29 22.5	—762.4	14 47.95	54 18.88
15	II. U.	22.1	13 50 34.25	111.92	61.42	S. 7 00 08.6	—744.4	14 46.79	54 14.61
	II. L.	—	14 13 04.90	113.29	61.79	9 26 44.6	—720.7	14 46.40	54 13.16
16	II. U.	23.1	14 35 55.74	115.28	62.33	S. 11 48 00.6	—691.0	14 46.76	54 14.50
	II. L.	—	14 59 13.89	117.84	63.01	14 02 41.4	—654.7	14 47.86	54 18.56
17	II. U.	24.1	15 23 05.87	120.91	63.82	S. 16 09 25.7	—611.3	14 49.68	54 25.23
	II. L.	—	15 47 37.43	124.42	64.74	18 06 43.9	—560.3	14 52.17	54 34.36
18	II. U.	25.2	16 12 53.17	128.25	65.73	S. 19 52 58.4	—500.7	14 55.27	54 45.76
	II. L.	—	16 38 56.21	132.27	66.75	21 26 24.0	—432.0	14 58.93	54 59.20

MOON, 1928.

AT TRANSIT AT GREENWICH.

Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^g Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	ε	° ' "	"	"	"
Jan. 19	II. U.	26.2	17 05 47.73	136.30	67.76	S. 22 45 10.3	-354.1	15 03.08	55 14.42
	II. L.	-	17 33 26.57	140.12	68.70	23 47 25.4	-266.9	15 07.63	55 31.12
20	II. U.	27.2	18 01 49.00	143.52	69.53	S. 24 31 21.5	-171.1	15 12.49	55 48.97
	II. L.	-	18 30 48.57	146.28	70.19	24 55 21.8	-67.9	15 17.57	56 07.62
21	II. U.	28.3	19 00 16.41	148.21	70.66	S. 24 58 08.2	+40.9	15 22.78	56 26.71
	II. L.	-	19 30 01.91	149.21	70.89	24 38 48.2	+152.7	15 27.99	56 45.85
22	II. U.	29.3	19 59 53.53	149.24	70.89	S. 23 57 01.3	+264.9	15 33.11	57 04.72
23	I. L.	-	20 27 18.64	148.41	70.68	S. 22 53 01.4	+374.4	15 38.08	57 22.94
	I. U.	0.7	20 56 50.79	146.82	70.29	21 27 37.3	+478.5	15 42.80	57 40.22
24	I. L.	-	21 26 00.26	144.68	69.77	S. 19 42 09.1	+574.7	15 47.19	57 56.31
	I. U.	1.7	21 54 41.83	142.22	69.17	17 38 23.2	+661.1	15 51.19	58 11.00
25	I. L.	-	22 22 53.15	139.68	68.55	S. 15 18 26.2	+736.4	15 54.77	58 24.15
	I. U.	2.8	22 50 34.55	137.27	67.97	12 44 38.5	+799.5	15 57.91	58 35.68
26	I. L.	-	23 17 48.79	135.18	67.47	S. 9 59 28.7	+850.0	16 00.60	58 45.55
	I. U.	3.8	23 44 40.65	133.56	67.09	7 05 29.3	+887.7	16 02.85	58 53.79
27	I. L.	-	00 11 16.41	132.51	66.85	S. 4 05 14.1	+912.7	16 04.66	59 00.44
	I. U.	4.8	00 37 43.47	132.12	66.78	S. 1 01 16.5	+924.8	16 06.06	59 05.59
28	I. L.	-	01 04 09.97	132.44	66.89	N. 2 03 50.0	+924.2	16 07.07	59 09.32
	I. U.	5.9	01 30 44.40	133.45	67.18	5 07 32.4	+910.8	16 07.73	59 11.73
29	I. L.	-	01 57 35.27	135.16	67.64	N. 8 07 16.3	+884.4	16 08.05	59 12.90
	I. U.	6.9	02 24 50.73	137.53	68.26	11 00 25.2	+844.9	16 08.05	59 12.87
30	I. L.	-	02 52 38.09	140.46	69.01	N. 13 44 20.3	+792.0	16 07.72	59 11.67
	I. U.	7.9	03 21 03.30	143.80	69.85	16 16 20.0	+725.6	16 07.07	59 09.32
31	I. L.	-	03 50 10.28	147.38	70.73	N. 18 33 41.9	+645.8	16 06.11	59 05.78
	I. U.	9.0	04 20 00.36	150.94	71.58	20 33 46.9	+552.9	16 04.81	59 00.99
Feb. 1	I. L.	-	04 50 31.47	154.17	72.34	N. 22 14 04.6	+448.1	16 03.15	58 54.91
	I. U.	10.0	05 21 37.96	156.78	72.94	23 32 22.4	+333.3	16 01.12	58 47.44
2	I. L.	-	05 53 10.42	158.45	73.30	N. 24 26 54.0	+211.0	15 58.69	58 38.53
	I. U.	11.1	06 24 56.22	158.97	73.39	24 56 29.8	+84.6	15 55.86	58 28.15
3	I. L.	-	06 56 40.67	158.21	73.16	N. 25 00 43.1	-42.1	15 52.63	58 16.29
	I. U.	12.1	07 28 08.40	156.19	72.64	24 39 54.3	-165.1	15 49.00	58 02.98
4	I. L.	-	07 59 05.03	153.07	71.85	N. 23 55 08.8	-281.0	15 45.00	57 48.30
	I. U.	13.1	08 29 18.54	149.06	70.85	22 48 10.3	-386.8	15 40.68	57 32.42
5	I. L.	-	08 58 40.16	144.47	69.69	N. 21 21 12.4	-480.7	15 36.07	57 15.50
6	II. U.	14.2	09 29 21.64	139.39	68.46	N. 19 36 45.8	-561.5	15 31.24	56 57.79
	II. L.	-	09 56 44.95	134.51	67.22	17 37 29.3	-629.0	15 26.28	56 39.57
7	II. U.	15.2	10 23 10.80	129.85	66.01	N. 15 26 01.0	-683.6	15 21.25	56 21.13
	II. L.	-	10 48 42.88	125.57	64.90	13 04 51.3	-726.0	15 16.27	56 02.82

MOON, 1928.

AT TRANSIT AT GREENWICH.

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Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	°	s	° ' "	"	"	"
Feb. 8	II. U.	16.2	11 13 26.48	121.79	63.91	N. 10 36 20.2	-757.4	15 11.40	55 44.96
	II. L.	-	11 37 28.10	118.58	63.06	8 02 34.2	-778.7	15 06.75	55 27.88
" 9	II. U.	17.3	12 00 54.89	115.99	62.38	N. 5 25 27.6	-791.0	15 02.40	55 11.91
	II. L.	-	12 23 54.40	114.03	61.87	2 46 42.1	-795.3	14 58.43	54 57.36
10	II. U.	18.3	12 46 34.29	112.72	61.53	N. 0 07 48.8	-792.4	14 54.93	54 44.50
	II. L.	-	13 09 02.35	112.06	61.37	S. 2 29 50.0	-783.0	14 51.96	54 33.59
11	II. U.	19.3	13 31 26.25	112.03	61.40	S. 5 04 58.1	-767.4	14 49.58	54 24.88
	II. L.	-	13 53 53.51	112.62	61.59	7 36 23.4	-745.9	14 47.86	54 18.55
12	II. U.	20.4	14 16 31.54	113.82	61.94	S. 10 02 55.8	-718.5	14 46.83	54 14.76
	II. L.	-	14 39 27.50	115.60	62.46	12 23 24.3	-685.2	14 46.52	54 13.64
13	II. U.	21.4	15 02.48.15	117.93	63.11	S. 14 36 35.8	-645.6	14 46.97	54 15.27
	II. L.	-	15 26 39.84	120.76	63.89	16 41 12.5	-599.3	14 48.17	54 19.71
14	II. U.	22.4	15 51 08.15	124.02	64.77	S. 18 35 50.7	-545.8	14 50.15	54 26.95
	II. L.	-	16 16 17.75	127.62	65.72	20 19 00.7	-484.5	14 52.87	54 36.95
15	II. U.	23.4	16 42 12.01	131.44	66.72	S. 21 49 06.0	-414.9	14 56.33	54 49.64
	II. L.	-	17 08 52.54	135.31	67.70	23 04 25.2	-336.8	15 00.48	55 04.87
16	II. U.	24.5	17 36 19.00	139.06	68.64	S. 24 03 14.7	-250.0	15 05.26	55 22.43
	II. L.	-	18 04 28.72	142.48	69.48	24 43 53.0	-155.0	15 10.61	55 42.07
17	II. U.	25.5	18 33 16.53	145.37	70.18	S. 25 04 45.6	-52.5	15 16.44	56 03.47
	II. L.	-	19 02 35.02	147.57	70.70	25 04 33.0	+55.7	15 22.65	56 26.26
18	II. U.	26.6	19 32 14.98	148.95	71.00	S. 24 42 16.9	+167.6	15 29.12	56 49.99
	II. L.	-	20 02 06.14	149.44	71.10	23 57 26.5	+280.8	15 35.71	57 14.18
19	II. U.	27.6	20 31 58.07	149.08	70.99	S. 22 50 02.9	+392.6	15 42.28	57 38.30
	II. L.	-	21 01 41.28	148.01	70.70	21 20 41.5	+500.0	15 48.69	58 01.81
20	II. U.	28.6	21 31 08.00	146.37	70.28	S. 19 30 30.8	+600.4	15 54.77	58 24.16
21	II. L.	-	22 00 12.78	144.39	69.77	S. 17 21 10.3	+691.3	16 00.41	58 44.83
	I. U.	0.1	22 26 34.28	142.36	69.24	14 54 45.2	+770.6	16 05.45	59 03.35
22	I. L.	-	22 54 50.23	140.32	68.74	S. 12 13 41.6	+837.2	16 09.80	59 19.32
	I. U.	1.2	23 22 43.06	138.54	68.30	9 20 40.5	+890.2	16 13.37	59 32.41
23	I. L.	-	23 50 16.73	137.15	67.97	S. 6 18 34.0	+928.4	16 16.10	59 42.42
	I. U.	2.2	00 17 36.76	136.28	67.77	S. 3 10 19.6	+951.5	16 17.96	59 49.26
24	I. L.	-	00 44 49.76	135.99	67.73	N. 0 01 01.9	+959.5	16 18.96	59 52.93
	I. U.	3.2	01 12 03.08	136.33	67.86	3 12 29.2	+952.5	16 19.13	59 53.56
25	I. L.	-	01 39 24.31	137.31	68.14	N. 6 21 02.7	+930.6	16 18.53	59 51.34
	I. U.	4.3	02 07 00.91	138.89	68.59	9 23 44.8	+894.0	16 17.22	59 46.54
26	I. L.	-	02 34 59.78	141.01	69.16	N. 12 17 41.4	+843.1	16 15.29	59 39.46
	I. U.	5.3	03 03 26.72	143.54	69.82	15 00 03.3	+778.3	16 12.84	59 30.45

MOON, 1928.

AT TRANSIT AT GREENWICH.

Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter	Hor. Par.
		d	h m s	s	s	° ' "	"	' "	' "
Feb. 27	I. L.	—	03 32 25.93	146.35	70.55	N. 17 28 07.1	+700.2	16 09.95	59 19.85
	I. U.	6.3	04 01 59.47	149.23	71.27	19 39 18.5	+609.7	16 06.71	59 07.97
28	I. L.	—	04 32 06.70	151.92	71.94	N. 21 31 15.8	+508.1	16 03.20	58 55.10
	I. U.	7.4	05 02 43.90	154.18	72.49	23 01 55.5	+397.1	15 59.49	58 41.48
29	I. L.	—	05 33 44.27	155.74	72.85	N. 24 09 38.2	+279.0	15 55.64	58 27.33
	I. U.	8.4	06 04 58.11	156.39	72.98	24 53 14.6	+156.6	15 51.68	58 12.82
Mar. 1	I. L.	—	06 36 13.52	155.99	72.85	N. 25 12 11.6	+33.0	15 47.66	57 58.05
	I. U.	9.5	07 07 17.70	154.52	72.45	25 06 34.2	—88.6	15 43.60	57 43.13
2	I. L.	—	07 37 57.98	152.03	71.81	N. 24 37 05.6	—205.1	15 39.50	57 28.11
	I. U.	10.5	08 08 03.18	148.71	70.94	23 45 03.5	—313.8	15 35.39	57 13.02
3	I. L.	—	08 37 24.44	144.76	69.93	N. 22 32 13.7	—412.7	15 31.27	56 57.91
	I. U.	11.5	09 05 55.82	140.43	68.80	21 00 42.3	—500.6	15 27.16	56 42.81
4	I. L.	—	09 33 34.27	135.98	67.63	N. 19 12 47.2	—576.6	15 23.05	56 27.76
	I. U.	12.6	10 00 19.55	131.60	66.47	17 10 51.3	—640.7	15 18.99	56 12.81
5	I. L.	—	10 26 13.67	127.47	65.37	N. 14 57 16.4	—693.2	15 14.96	55 58.03
	I. U.	13.6	10 51 20.44	123.74	64.37	12 34 19.4	—734.6	15 11.01	55 43.54
6	II. L.	—	11 17 51.92	120.31	63.48	N. 10 04 09.6	—765.5	15 07.17	55 29.43
7	II. U.	14.6	11 41 38.68	117.58	62.74	N. 7 28 47.3	—786.7	15 03.48	55 15.87
	II. L.	—	12 04 55.99	115.40	62.14	4 50 03.8	—799.1	14 59.97	55 03.00
8	II. U.	15.7	12 27 50.69	113.81	61.72	N. 2 09 41.3	—803.3	14 56.71	54 51.02
	II. L.	—	12 50 29.73	112.80	61.45	S. 0 30 45.2	—799.9	14 53.74	54 40.12
9	II. U.	16.7	13 13 00.10	112.36	61.36	S. 3 09 47.8	—789.4	14 51.11	54 30.48
	II. L.	—	13 35 28.68	112.50	61.42	5 46 04.0	—772.2	14 48.89	54 22.32
10	II. U.	17.7	13 58 02.22	113.19	61.65	S. 8 18 14.6	—748.5	14 47.12	54 15.86
	II. L.	—	14 20 47.29	114.41	62.03	10 45 02.4	—718.4	14 45.88	54 11.27
11	II. U.	18.7	14 43 50.16	116.15	62.54	S. 13 05 11.1	—682.0	14 45.19	54 08.75
	II. L.	—	15 07 16.76	118.36	63.18	15 17 23.3	—639.0	14 45.12	54 08.48
12	II. U.	19.8	15 31 12.48	120.99	63.94	S. 17 20 19.8	—589.3	14 45.70	54 10.61
	II. L.	—	15 55 42.01	123.98	64.77	19 12 38.0	—532.5	14 46.96	54 15.26
13	II. U.	20.8	16 20 49.15	127.24	65.67	S. 20 52 51.9	—468.5	14 48.94	54 22.53
	II. L.	—	16 46 36.45	130.66	66.59	22 19 32.3	—396.9	14 51.66	54 32.50
14	II. U.	21.8	17 13 04.96	134.09	67.50	S. 23 31 07.8	—317.7	14 55.12	54 45.18
	II. L.	—	17 40 14.08	137.39	68.37	24 26 07.0	—230.9	14 59.31	55 00.57
15	II. U.	22.9	18 08 01.22	140.40	69.13	S. 25 03 01.7	—137.0	15 04.21	55 18.56
	II. L.	—	18 36 21.90	142.96	69.78	25 20 30.8	—36.7	15 09.79	55 39.04
16	II. U.	23.9	19 05 09.90	144.93	70.26	S. 25 17 25.6	+68.5	15 15.98	56 01.78
	II. L.	—	19 34 17.63	146.23	70.56	24 52 54.4	+177.2	15 22.72	56 26.51

MOON, 1928.

AT TRANSIT AT GREENWICH.

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Date.	Limb and Transit.	Age.	Apparent Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^g Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	s	" "	" "	" "	" "
Mar. 17	II. U.	24.9	20 03 36.74	146.83	70.69	S. 24 06 27.3	+287.4	15 29.90	56 52.85
	II. L.	—	20 32 58.97	146.76	70.64	22 57 59.8	+396.9	15 37.39	57 20.37
18	II. U.	26.0	21 02 16.81	146.12	70.45	S. 21 27 55.0	+503.2	15 45.06	57 48.51
	II. L.	—	21 31 24.17	145.04	70.16	19 37 04.1	+604.1	15 52.74	58 16.69
19	II. U.	27.0	22 00 16.87	143.71	69.78	S. 17 26 46.3	+697.4	16 00.24	58 44.22
	II. L.	—	22 28 52.96	142.31	69.40	14 58 46.3	+780.8	16 07.38	59 10.44
20	II. U.	28.1	22 57 12.63	141.00	69.05	S. 12 15 12.9	+852.6	16 13.97	59 34.63
	II. L.	—	23 25 18.10	139.96	68.77	9 18 35.5	+911.2	16 19.83	59 56.12
21	II. U.	29.1	23 53 13.33	139.32	68.60	S. 6 11 41.5	+955.2	16 24.78	60 14.29
22	I. L.	—	00 18 46.56	139.16	68.55	S. 2 57 33.7	+983.4	16 28.68	60 28.61
	I. U.	0.7	00 46 38.10	139.53	68.66	N. 0 20 33.4	+994.9	16 31.43	60 38.70
23	I. L.	—	01 14 37.63	140.49	68.92	N. 3 39 15.7	+989.2	16 32.97	60 44.35
	I. U.	1.7	01 42 52.14	142.02	69.34	6 55 04.5	+966.0	16 33.27	60 45.47
24	I. L.	—	02 11 28.26	144.08	69.89	N. 10 04 28.9	+925.2	16 32.38	60 42.20
	I. U.	2.8	02 40 31.72	146.56	70.54	13 04 00.1	+867.2	16 30.36	60 34.77
25	I. L.	—	03 10 06.70	149.31	71.26	N. 15 50 16.5	+792.9	16 27.32	60 23.61
	I. U.	3.8	03 40 15.30	152.12	71.99	18 20 07.9	+703.3	16 23.40	60 09.22
26	I. L.	—	04 10 56.89	154.76	72.67	N. 20 30 42.2	+600.3	16 18.75	59 52.15
	I. U.	4.8	04 42 07.71	156.94	73.22	22 19 31.3	+486.2	16 13.53	59 32.98
27	I. L.	—	05 13 40.75	158.42	73.60	N. 23 44 38.5	+363.9	16 07.89	59 12.30
	I. U.	5.9	05 45 26.03	158.95	73.74	24 44 43.6	+236.5	16 02.00	58 50.67
28	I. L.	—	06 17 11.35	158.41	73.61	N. 25 19 08.0	+107.7	15 55.98	58 28.58
	I. U.	6.9	06 48 43.44	156.75	73.20	25 27 55.8	— 19.0	15 49.95	58 06.44
29	I. L.	—	07 19 49.30	154.06	72.53	N. 25 11 51.9	— 140.4	15 44.00	57 44.63
	I. U.	8.0	07 50 17.44	150.50	71.63	24 32 16.5	— 253.9	15 38.22	57 23.41
30	I. L.	—	08 19 58.90	146.32	70.57	N. 23 30 57.0	— 357.5	15 32.66	57 02.95
	I. U.	9.0	08 48 47.64	141.76	69.39	22 10 00.2	— 450.0	15 27.35	56 43.52
31	I. L.	—	09 16 40.77	137.09	68.16	N. 20 31 42.7	— 530.9	15 22.33	56 25.08
	I. U.	10.0	09 43 38.18	132.51	66.93	18 38 24.0	— 600.3	15 17.60	56 07.72
Apr. 1	I. L.	—	10 09 42.03	128.19	65.77	N. 16 32.21.6	— 658.3	15 13.18	55 51.47
	I. U.	11.1	10 34 56.37	124.27	64.69	14 15 47.2	— 705.7	15 09.04	55 36.31
2	I. L.	—	10 59 26.40	120.82	63.73	N. 11 50 45.3	— 743.0	15 05.20	55 22.23
	I. U.	12.1	11 23 18.28	117.91	62.90	9 19 11.6	— 771.1	15 01.66	55 09.20
3	I. L.	—	11 46 38.54	115.56	62.24	N. 6 42 54.8	— 790.3	14 58.40	54 57.23
	I. U.	13.1	12 09 34.06	113.79	61.74	4 03 35.8	— 801.5	14 55.42	54 46.30
4	I. L.	—	12 32 11.74	112.59	61.40	N. 1 22 50.0	— 804.9	14 52.73	54 36.43
5	II. U.	14.1	12 56 40.88	111.94	61.22	S. 1 17 52.5	— 801.0	14 50.33	54 27.63
	II. L.	—	13 19 03.32	111.89	61.20	3 57 05.3	— 790.0	14 48.25	54 19.98

MOON, 1928.

AT TRANSIT AT GREENWICH.

Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Merid. pass Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	s	° ' "	"	' "	' "
Apr. 6	II. U.	15.2	13 41 28.36	112.37	61.35	S. 6 33 24.1	-772.0	14 46.49	54 13.53
	II. L.	-	14 04 02.33	113.37	61.64	9 05 26.6	-747.3	14 45.09	54 08.36
7	II. U.	16.2	14 26 51.19	114.85	62.07	S. 11 31 50.6	-715.6	14 44.06	54 04.59
	II. L.	-	14 50 00.51	116.77	62.63	13 51 13.6	-677.1	14 43.44	54 02.34
8	II. U.	17.2	15 13 35.35	119.09	63.30	S. 16 02 12.2	-631.5	14 43.27	54 01.72
	II. L.	-	15 37 40.08	121.74	64.05	18 03 21.1	-578.8	14 43.59	54 02.88
9	II. U.	18.3	16 02 18.22	124.65	64.87	S. 19 53 14.2	-518.8	14 44.43	54 05.97
	II. L.	-	16 27 32.24	127.70	65.73	21 30 23.7	-451.5	14 45.83	54 11.11
10	II. U.	19.3	16 53 23.27	130.80	66.58	S. 22 53 21.9	-377.0	14 47.83	54 18.45
	II. L.	-	17 19 50.98	133.79	67.41	24 00 43.2	-295.4	14 50.46	54 28.08
11	II. U.	20.3	17 46 53.36	136.55	68.15	S. 24 51 05.4	-207.2	14 53.73	54 40.10
	II. L.	-	18 14 26.83	138.95	68.80	25 23 13.5	-113.2	14 57.67	54 54.57
12	II. U.	21.4	18 42 26.27	140.86	69.31	S. 25 36 02.7	-14.3	15 02.29	55 11.51
	II. L.	-	19 10 45.35	142.21	69.67	25 28 42.1	+88.2	15 07.57	55 30.89
13	II. U.	22.4	19 39 17.07	142.97	69.87	S. 25 00 36.9	+192.9	15 13.49	55 52.63
	II. L.	-	20 07 54.27	143.14	69.91	24 11 31.7	+297.9	15 20.02	56 16.58
14	II. U.	23.4	20 36 30.36	142.80	69.82	S. 23 01 31.3	+401.7	15 27.08	56 42.52
	II. L.	-	21 04 59.85	142.06	69.62	21 31 01.8	+502.5	15 34.60	57 10.11
15	II. U.	24.5	21 33 18.80	141.07	69.35	S. 19 40 49.4	+598.6	15 42.47	57 38.99
	II. L.	-	22 01 25.14	139.99	69.05	17 32 01.0	+688.3	15 50.54	58 08.62
16	II. U.	25.5	22 29 18.78	138.98	68.76	S. 15 06 02.2	+770.0	15 58.67	58 38.44
	II. L.	-	22 57 01.47	138.19	68.52	12 24 38.1	+842.3	16 06.66	59 07.78
17	II. U.	26.6	23 24 36.79	137.77	68.38	S. 9 29 51.7	+903.5	16 14.32	59 35.89
	II. L.	-	23 52 09.75	137.81	68.37	6 24 05.5	+952.0	16 21.43	60 02.00
18	II. U.	27.6	00 19 46.57	138.42	68.49	S. 3 10 00.3	+986.4	16 27.78	60 25.31
	II. L.	-	00 47 34.34	139.65	68.78	N. 0 09 24.1	+1005.0	16 33.17	60 45.08
19	II. U.	28.6	01 15 40.62	141.51	69.24	N. 3 30 49.8	+1006.3	16 37.40	61 00.62
	II. L.	-	01 44 12.91	143.98	69.86	6 50 42.7	+989.3	16 40.34	61 11.39
20	I. U.	0.3	02 10 57.02	146.86	70.61	N. 10 05 15.8	+952.9	16 41.87	61 17.02
21	I. L.	-	02 40 39.45	150.27	71.47	N. 13 10 33.6	+896.7	16 41.95	61 17.31
	I. U.	1.3	03 11 04.40	153.91	72.38	16 02 39.5	+821.0	16 40.59	61 12.31
22	I. L.	-	03 42 13.00	157.50	73.28	N. 18 37 43.8	+726.7	16 37.86	61 02.30
	I. U.	2.4	04 14 02.82	160.72	74.08	20 52 15.5	+615.9	16 33.88	60 47.68
23	I. L.	-	04 46 27.40	163.22	74.70	N. 22 43 13.1	+491.6	16 28.80	60 29.04
	I. U.	3.4	05 19 16.12	164.69	75.09	24 08 16.9	+357.7	16 22.82	60 07.10
24	I. L.	-	05 52 14.92	164.87	75.16	N. 25 05 58.4	+218.8	16 16.15	59 42.61
	I. U.	4.5	06 25 07.44	163.64	74.89	25 35 46.2	+79.6	16 08.99	59 16.33

MOON, 1928.
AT TRANSIT AT GREENWICH.

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Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass Merid.	Apparent Declination of Centre	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	s	° ' "	"	"	"
Apr. 25	I. L.	—	06 57 36.88	161.04	74.28	N. 25 38 05.6	— 55.2	16 01.55	58 49.02
	I. U.	5.5	07 29 27.80	157.26	73.38	25 14 12.9	— 181.9	15 54.01	58 21.34
26	I. L.	—	08 00 27.62	152.59	72.25	N. 24 26 04.4	— 297.5	15 46.53	57 53.88
	I. U.	6.5	08 30 27.63	147.35	70.95	23 16 03.6	— 400.4	15 39.24	57 27.13
27	I. L.	—	08 59 23.07	141.88	69.57	N. 21 46 47.6	— 490.0	15 32.26	57 01.50
	I. U.	7.6	09 27 12.97	136.47	68.16	20 00 56.9	— 566.3	15 25.66	56 37.28
28	I. L.	—	09 53 59.42	131.34	66.81	N. 18 01 06.5	— 630.2	15 19.49	56 14.66
	I. U.	8.6	10 19 46.88	126.66	65.55	15 49 41.9	— 682.3	15 13.81	55 53.80
29	I. L.	—	10 44 41.34	122.52	64.41	N. 13 28 56.4	— 723.7	15 08.63	55 34.78
	I. U.	9.6	11 08 49.84	117.00	63.42	11 00 50.6	— 755.7	15 03.95	55 17.62
30	I. L.	—	11 32 19.92	116.12	62.60	N. 8 27 13.9	— 779.0	14 59.78	55 02.31
	I. U.	10.7	11 55 19.36	113.89	61.95	5 49 46.0	— 794.4	14 56.10	54 48.81
1	I. L.	—	12 17 55.93	112.31	61.48	N. 3 09 58.5	— 802.4	14 52.90	54 37.06
	I. U.	11.7	12 40 17.26	111.35	61.18	N. 0 29 17.5	— 803.4	14 50.16	54 27.00
2	I. L.	—	13 02 30.78	111.00	61.06	S. 2 10 55.0	— 797.6	14 47.86	54 18.55
	I. U.	12.7	13 24 43.59	111.23	61.11	4 49 18.2	— 785.2	14 45.98	54 11.64
3	I. L.	—	13 47 02.50	112.01	61.31	S. 7 24 32.6	— 766.1	14 44.50	54 06.22
	I. U.	13.7	14 09 33.99	113.32	61.67	9 55 17.3	— 740.2	14 43.41	54 02.23
4	I. L.	—	14 32 24.03	115.10	62.17	S. 12 20 09.8	— 707.4	14 42.71	53 59.64
5	II. U.	14.8	14 57 43.61	117.42	62.78	S. 14 37 45.2	— 667.3	14 42.38	53 58.44
	II. L.	—	15 21 27.77	120.00	63.49	16 46 35.4	— 619.8	14 42.43	53 58.63
6	II. U.	15.8	15 45 44.63	122.85	64.28	S. 18 45 10.4	— 564.7	14 42.87	54 00.24
	II. L.	—	16 10 36.85	125.88	65.11	20 31 58.1	— 501.9	14 43.71	54 03.32
7	II. U.	16.8	16 36 05.82	128.95	65.95	S. 22 05 26.2	— 431.5	14 44.96	54 07.91
	II. L.	—	17 02 11.23	131.93	66.77	23 24 04.4	— 353.8	14 46.65	54 14.10
8	II. U.	17.9	17 28 51.18	134.78	67.52	S. 24 26 26.9	— 269.0	14 48.79	54 21.56
	II. L.	—	17 56 01.99	137.05	68.17	25 11 15.5	— 178.2	14 51.41	54 31.58
9	II. U.	18.9	18 23 38.40	138.92	68.69	S. 25 37 23.9	— 82.5	14 54.53	54 43.04
	II. L.	—	18 51 33.83	140.21	69.06	25 44 00.4	+ 16.8	14 58.18	54 56.43
10	II. U.	19.9	19 19 40.87	140.86	69.26	S. 25 30 30.4	+ 118.3	15 02.37	55 11.80
	II. L.	—	19 47 52.00	140.89	69.31	24 56 38.8	+ 220.2	15 07.10	55 29.17
11	II. U.	21.0	20 16 00.12	140.37	69.20	S. 24 02 30.2	+ 320.9	15 12.38	55 48.54
	II. L.	—	20 43 59.26	139.42	68.98	22 48 28.0	+ 418.9	15 18.19	56 09.86
12	II. U.	22.0	21 11 45.03	138.17	68.67	S. 21 15 13.4	+ 512.8	15 24.50	56 33.04
	II. L.	—	21 39 14.92	136.80	68.32	19 23 43.0	+ 601.3	15 31.27	56 57.90
13	II. U.	23.1	22 06 28.50	135.48	67.98	S. 17 15 07.3	+ 683.5	15 38.43	57 24.18
	II. L.	—	22 33 27.24	134.36	67.67	14 50 48.7	+ 758.3	15 45.91	57 51.61

MOON, 1928.

AT TRANSIT AT GREENWICH.

Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
May 14	II. U.	24.1	23 00 14.51	133.59	67.46	S. 12 12 21.4	+824.8	15 53.57	58 19.72
	II. L.	—	23 26 55.30	133.30	67.36	9 21 31.4	+881.9	16 01.28	58 48.03
15	II. U.	25.1	23 53 35.92	133.58	67.40	S. 6 20 18.1	+928.5	16 08.88	59 15.94
	II. L.	—	00 20 23.84	134.52	67.62	S. 3 10 54.9	+963.3	16 16.19	59 42.78
16	II. U.	26.2	00 47 27.36	136.18	68.02	N. 0 04 06.8	+984.7	16 23.01	60 07.81
	II. L.	—	01 14 55.19	138.58	68.60	3 21 56.9	+991.1	16 29.14	60 30.28
17	II. U.	27.2	01 42 56.20	141.71	69.37	N. 6 39 25.2	+980.7	16 34.35	60 49.43
	II. L.	—	02 11 38.79	145.50	70.30	9 53 00.8	+952.0	16 38.47	61 04.54
18	II. U.	28.2	02 41 10.20	149.82	71.36	N. 12 58 53.9	+903.5	16 41.32	61 15.02
	II. L.	—	03 11 35.74	154.47	72.49	15 53 01.7	+834.3	16 42.79	61 20.38
19	II. U.	29.3	03 42 57.58	159.15	73.62	N. 18 31 15.1	+744.5	16 42.79	61 20.38
20	I. L.	—	04 12 44.52	163.31	74.66	N. 20 49 32.0	+635.2	16 41.31	61 14.96
	I. U.	1.0	04 45 46.62	166.87	75.51	22 44 12.8	+509.0	16 38.40	61 04.27
21	I. L.	—	05 19 24.68	169.23	76.08	N. 24 12 17.1	+369.9	16 34.17	60 48.72
	I. U.	2.0	05 53 21.97	170.03	76.29	25 11 40.8	+223.2	16 28.75	60 28.86
22	I. L.	—	06 27 18.47	169.08	76.09	N. 25 41 27.7	+74.8	16 22.36	60 05.40
	I. U.	3.1	07 00 53.20	166.42	75.48	25 41 53.4	—69.3	16 15.21	59 39.15
23	I. L.	—	07 33 46.70	162.27	74.52	N. 25 14 19.5	—204.3	16 07.53	59 10.94
	I. U.	4.1	08 05 43.16	156.99	73.27	24 21 00.9	—326.3	15 59.52	58 41.56
24	I. L.	—	08 36 31.68	151.02	71.84	N. 23 04 47.2	—433.3	15 51.40	58 11.78
	I. U.	5.2	09 06 06.61	144.79	70.31	21 28 45.0	—524.4	15 43.36	57 42.25
25	I. L.	—	09 34 26.97	138.65	68.75	N. 19 36 02.6	—600.1	15 35.54	57 13.55
	I. U.	6.2	10 01 35.51	132.86	67.27	17 29 39.3	—661.5	15 28.07	56 46.15
26	I. L.	—	10 27 37.79	127.62	65.89	N. 15 12 18.6	—709.9	15 21.07	56 20.42
	I. U.	7.2	10 52 41.12	123.05	64.67	12 46 26.8	—746.9	15 14.58	55 56.61
27	I. L.	—	11 16 53.81	119.19	63.59	N. 10 14 11.9	—774.0	15 08.67	55 34.94
	I. U.	8.3	11 40 24.62	116.07	62.72	7 37 25.8	—792.3	15 03.38	55 15.53
28	I. L.	—	12 03 22.46	113.69	62.04	N. 4 57 47.3	—802.9	14 58.73	54 58.43
	I. U.	9.3	12 25 56.12	112.03	61.55	N. 2 16 44.4	—806.5	14 54.70	54 43.65
29	I. L.	—	12 48 14.05	111.07	61.26	S. 0 24 21.7	—803.5	14 51.30	54 31.17
	I. U.	10.3	13 10 24.48	110.78	61.14	3 04 15.3	—794.4	14 48.51	54 20.93
30	I. L.	—	13 32 35.22	111.12	61.22	S. 5 41 42.2	—779.1	14 46.31	54 12.85
	I. U.	11.3	13 54 53.67	112.06	61.45	8 15 28.5	—757.6	14 44.67	54 06.83
31	I. L.	—	14 17 26.80	113.56	61.85	S. 10 44 18.4	—729.6	14 43.56	54 02.76
	I. U.	12.4	14 40 21.04	115.56	62.38	13 06 52.8	—694.9	14 42.95	54 00.53
June 1	I. L.	—	15 03 42.13	118.02	63.04	S. 15 21 48.0	—653.1	14 42.81	54 00.02
	I. U.	13.4	15 27 34.95	120.84	63.79	17 27 36.3	—603.7	14 43.11	54 01.12

MOON, 1928.
AT TRANSIT AT GREENWICH.

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Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ² Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
June 2	I. L. I. U.	d 14.4	h m s 15 52 03.36 16 17 09.85	s 123.93 127.16	s 64.62 65.47	S. 19 22 45.6 21 05 40.4	-546.5 -481.3	14 43.83 14 44.93	54 03.74 54 07.79
3	I. L.	-	16 42 55.28	130.39	66.32	S. 22 34 44.3	-408.1	14 46.40	54 13.20
4	II. U. II. L.	15.5 -	17 11 32.93 17 38 32.75	133.59 136.31	67.12 67.84	S. 23 48 23.2 24 45 08.1	-327.1 -239.2	14 48.24 14 50.40	54 19.91 54 27.89
5	II. U. II. L.	16.5 -	18 06 02.34 18 33 54.89	138.53 140.11	68.43 68.86	S. 25 23 41.3 25 42 59.0	-145.4 -46.9	14 52.92 14 55.77	54 37.12 54 47.59
6	II. U. II. L.	17.5 -	19 02 02.28 19 30 15.82	140.99 141.14	69.12 69.19	S. 25 42 16.5 25 21 11.2	+54.3 +156.5	14 58.97 15 02.50	54 59.32 55 12.31
7	II. U. II. L.	18.6 -	19 58 26.86 20 26 27.72	140.59 139.46	69.09 68.83	S. 24 39 43.0 23 38 14.4	+257.8 +356.3	15 06.39 15 10.64	55 26.58 55 42.17
8	II. U. II. L.	19.6 -	20 54 12.23 21 21 36.25	137.90 136.08	68.47 68.03	S. 22 17 28.5 20 38 25.8	+450.5 +538.9	15 15.25 15 20.21	55 59.07 56 17.28
9	II. U. II. L.	20.6 -	21 48 37.83 22 15 17.25	134.19 132.41	67.57 67.13	S. 18 42 20.2 16 30 36.6	+620.8 +695.2	15 25.51 15 31.15	56 36.76 56 57.45
10	II. U. II. L.	21.7 -	22 41 36.89 23 07 40.97	130.92 129.84	66.75 66.48	S. 14 04 47.4 11 26 31.6	+761.6 +819.5	15 37.08 15 43.26	57 19.21 57 41.88
11	II. U. II. L.	22.7 -	23 33 35.30 23 59 26.96	129.31 129.42	66.34 66.35	S. 8 37 34.7 5 39 48.5	+868.4 +907.6	15 49.61 15 56.07	58 05.21 58 28.91
12	II. U. II. L.	23.7 -	00 25 24.19 00 51 35.88	130.24 131.84	66.56 66.96	S. 2 35 14.0 N. 0 33 57.0	+936.3 +953.5	16 02.52 16 08.83	58 52.58 59 15.76
13	II. U. II. L.	24.8 -	01 18 11.55 01 45 20.85	134.24 137.44	67.56 68.36	N. 3 45 18.5 6 56 07.9	+957.8 +947.9	16 14.87 16 20.48	59 37.93 59 58.50
14	II. U. II. L.	25.8 -	02 13 13.21 02 41 57.25	141.41 146.03	69.34 70.48	N. 10 03 23.5 13 03 43.8	+921.9 +878.4	16 25.47 16 29.69	60 16.85 60 32.33
15	II. U. II. L.	26.8 -	03 11 39.80 03 42 25.11	151.13 156.43	71.71 72.99	N. 15 53 28.8 18 28 44.8	+815.8 +733.4	16 32.97 16 35.16	60 44.36 60 52.39
16	II. U. II. L.	27.9 -	04 14 13.42 04 47 00.00	161.56 166.06	74.21 75.27	N. 20 45 33.5 22 40 05.2	+631.3 +511.0	16 36.14 16 35.84	60 56.00 60 54.90
17	II. U.	28.9	05 20 34.34	169.43	76.06	N. 24 08 57.9	+375.5	16 34.23	60 48.98
18	I. L. I. U.	- 0.7	05 52 07.29 06 26 24.20	171.22 171.26	76.49 76.50	N. 25 09 35.7 25 40 27.1	+229.5 +78.9	16 31.33 16 27.23	60 38.34 60 23.28
19	I. L. I. U.	- 1.7	07 00 30.11 07 34 02.75	169.39 165.77	76.07 75.23	N. 25 41 15.1 25 12 58.5	-70.0 -211.0	16 22.04 16 15.93	60 04.24 59 41.82
20	I. L. I. U.	- 2.8	08 06 43.09 08 38 17.01	160.75 154.79	74.05 72.63	N. 24 17 40.9 22 58 13.4	-339.4 -452.2	16 09.10 16 01.74	59 16.74 58 49.71
21	I. L. I. U.	- 3.8	09 08 36.19 09 37 37.84	148.38 141.93	71.08 69.49	N. 21 17 54.5 19 20 10.4	-547.9 -626.6	15 54.05 15 46.24	58 21.51 57 52.83

MOON, 1928.

AT TRANSIT AT GREENWICH.

Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sol. Time of Semi-d. pass'd Moon.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	s	° ' "	"	"	"
June 22	I. L.	—	10 05 23.64	135.78	67.95	N. 17 08 21.1	—689.1	15 38.48	57 24.33
	I. U.	4.8	10 31 58.62	130.16	66.50	14 45 31.0	—737.0	15 30.92	56 56.60
23	I. L.	—	10 57 30.04	125.20	65.21	N. 12 14 24.0	—772.2	15 23.70	56 30.11
	I. U.	5.9	11 22 06.52	121.00	64.08	9 37 23.3	—796.3	15 16.94	56 05.28
24	I. L.	—	11 45 57.24	117.58	63.15	N. 6 56 32.2	—810.8	15 10.71	55 42.42
	I. U.	6.9	12 09 11.61	114.94	62.44	4 13 36.9	—817.1	15 05.09	55 21.79
25	I. L.	—	12 31 58.99	113.08	61.91	N. 1 30 09.8	—816.3	15 00.12	55 03.55
	I. U.	7.9	12 54 28.45	111.95	61.60	S. 1 12 27.1	—808.9	14 55.84	54 47.83
26	I. L.	—	13 16 48.73	111.54	61.47	S. 3 52 58.7	—795.4	14 52.25	54 34.66
	I. U.	8.9	13 39 08.18	111.81	61.53	6 30 13.2	—776.1	14 49.37	54 24.08
27	I. L.	—	14 01 34.74	112.72	61.77	S. 9 03 01.1	—750.9	14 47.18	54 16.04
	I. U.	10.0	14 24 15.87	114.23	62.17	11 30 10.5	—719.6	14 45.66	54 10.48
28	I. L.	—	14 47 18.49	116.29	62.71	S. 13 50 27.2	—682.0	14 44.80	54 07.32
	I. U.	11.0	15 10 48.81	118.83	63.39	16 02 31.6	—637.6	14 44.56	54 06.43
29	I. L.	—	15 34 52.10	121.78	64.16	S. 18 04 59.4	—585.8	14 44.90	54 07.67
	I. U.	12.0	15 59 32.59	125.01	65.00	19 56 20.2	—526.3	14 45.78	54 10.90
30	I. L.	—	16 24 52.93	128.40	65.87	S. 21 34 59.6	—458.9	14 47.16	54 15.96
	I. U.	13.1	16 50 54.12	131.78	66.74	22 59 20.6	—383.3	14 48.99	54 22.68
July 1	I. L.	—	17 17 35.01	134.99	67.55	S. 24 07 46.9	—299.8	14 51.22	54 30.88
	I. U.	14.1	17 44 52.34	137.87	68.26	24 58 48.1	—209.2	14 53.82	54 40.41
2	I. L.	—	18 12 40.50	140.10	68.82	S. 25 31 03.8	—112.5	14 56.73	54 51.10
	I. U.	15.1	18 40 52.00	141.68	69.22	25 43 30.1	—11.3	14 59.92	55 02.80
3	II. L.	—	19 11 36.67	142.50	69.42	S. 25 35 23.7	+ 92.6	15 03.34	55 15.38
4	II. U.	16.2	19 40 07.15	142.45	69.42	S. 25 06 26.2	+196.9	15 06.97	55 28.70
	II. L.	—	20 08 32.41	141.64	69.23	24 16 45.8	+299.4	15 10.78	55 42.69
5	II. U.	17.2	20 36 43.97	140.19	68.89	S. 23 06 56.0	+398.1	15 14.75	55 57.24
	II. L.	—	21 04 35.21	138.28	68.43	21 37 53.6	+491.2	15 18.85	56 12.30
6	II. U.	18.2	21 32 01.70	136.10	67.00	S. 19 50 55.2	+577.2	15 23.07	56 27.80
	II. L.	—	21 59 01.39	133.85	67.35	17 47 32.2	+655.2	15 27.41	56 43.71
7	II. U.	19.3	22 25 34.67	131.73	66.83	S. 15 29 26.4	+724.3	15 31.84	56 59.99
	II. L.	—	22 51 44.08	129.90	66.37	12 58 26.7	+784.1	15 36.37	57 16.59
8	II. U.	20.3	23 17 34.04	128.51	66.03	S. 10 16 26.5	+834.3	15 40.97	57 33.47
	II. L.	—	23 43 10.53	127.67	65.83	7 25 22.6	+874.7	15 45.62	57 50.55
9	II. U.	21.3	00 08 40.82	127.49	65.80	S. 4 27 14.9	+904.9	15 50.30	58 07.72
	II. L.	—	00 34 13.14	128.02	65.95	S. 1 24 07.4	+924.6	15 54.96	58 24.86
10	II. U.	22.4	00 59 56.47	129.33	66.30	N. 1 41 49.8	+933.1	15 59.57	58 41.75
	II. L.	—	01 26 00.27	131.44	66.85	4 48 18.6	+929.7	16 04.05	58 58.19

MOON, 1928.
AT TRANSIT AT GREENWICH.

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Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^e Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	s	° ' "	"	"	"
July 11	II. U.	23.4	01 52 34.14	134.34	67.60	N. 7 52 50.0	+913.3	16 08.32	59 13.87
	II. L.	—	02 19 47.55	138.02	68.54	10 52 41.7	+882.9	16 12.30	59 28.47
12	II. U.	24.4	02 47 49.21	142.37	69.63	N. 13 44 57.0	+837.0	16 15.88	59 41.61
	II. L.	—	03 16 46.40	147.24	70.83	16 26 23.9	+774.6	16 18.95	59 52.88
13	II. U.	25.5	03 46 44.11	152.40	72.08	N. 18 53 38.1	+694.8	16 21.39	60 01.86
	II. L.	—	04 17 43.89	157.52	73.30	21 03 08.9	+597.4	16 23.11	60 08.16
14	II. U.	26.5	04 49 42.85	162.19	74.40	N. 22 51 28.9	+483.2	16 23.99	60 11.40
	II. L.	—	05 22 32.84	165.95	75.27	24 15 28.7	+354.5	16 23.95	60 11.25
15	II. U.	27.6	05 56 00.23	168.35	75.82	N. 25 12 33.6	+214.8	16 22.94	60 07.55
	II. L.	—	06 29 46.76	169.09	75.98	25 41 00.8	+69.2	16 20.94	60 00.20
16	II. U.	28.6	07 03 31.21	168.00	75.71	N. 25 40 13.0	— 76.7	16 17.96	59 49.25
	II. L.	—	07 36 52.06	165.18	75.05	25 10 42.6	— 217.0	16 14.04	59 34.88
17	I. U.	0.3	08 07 01.81	161.10	74.03	N. 24 14 07.2	— 346.7	16 09.28	59 17.42
18	I. L.	—	08 38 44.00	155.80	72.77	N. 22 52 58.0	— 462.1	16 03.80	58 57.30
	I. U.	1.4	09 09 18.37	149.87	71.32	21 10 20.4	— 561.2	15 57.74	58 35.03
19	I. L.	—	09 38 40.14	143.76	69.82	N. 19 09 37.0	— 643.1	15 51.23	58 11.16
	I. U.	2.4	10 06 49.15	137.80	68.32	16 54 11.3	— 708.4	15 44.46	57 46.30
20	I. L.	—	10 33 48.95	132.26	66.92	N. 14 27 17.3	— 758.2	15 37.57	57 21.01
	I. U.	3.4	10 59 45.62	127.30	65.64	11 51 51.2	— 794.0	15 30.72	56 55.86
21	I. L.	—	11 24 46.88	123.03	64.53	N. 9 10 29.8	— 817.7	15 24.04	56 31.35
	I. U.	4.5	11 49 01.43	119.52	63.61	6 25 29.7	— 830.7	15 17.67	56 07.95
22	I. L.	—	12 12 38.32	116.76	62.88	N. 3 38 49.3	— 834.6	15 11.70	55 46.05
	I. U.	5.5	12 35 46.66	114.76	62.35	N. 0 52 11.0	— 830.5	15 06.24	55 26.01
23	I. L.	—	12 58 35.44	113.50	62.02	S. 1 52 55.3	— 819.4	15 01.36	55 08.09
	I. U.	6.5	13 21 13.40	112.95	61.88	4 35 09.5	— 801.9	14 57.11	54 52.51
24	I. L.	—	13 43 48.92	113.08	61.93	S. 7 13 17.0	— 778.4	14 53.55	54 39.45
	I. U.	7.6	14 06 30.03	113.87	62.16	9 46 07.0	— 749.0	14 50.71	54 29.01
25	I. L.	—	14 29 24.31	115.27	62.55	S. 12 12 29.1	— 713.7	14 48.59	54 21.24
	I. U.	8.6	14 52 38.83	117.23	63.09	14 31 11.4	— 672.3	14 47.21	54 16.18
26	I. L.	—	15 16 19.93	119.70	63.76	S. 16 40 58.4	— 624.4	14 46.57	54 13.81
	I. U.	9.6	15 40 33.21	122.58	64.52	18 40 29.7	— 569.6	14 46.63	54 14.03
27	I. L.	—	16 05 22.99	125.77	65.35	S. 20 28 19.7	— 507.5	14 47.38	54 16.80
	I. U.	10.6	16 30 52.34	129.14	66.23	22 02 58.8	— 437.7	14 48.79	54 21.95
28	I. L.	—	16 57 02.46	132.54	67.08	S. 23 22 53.5	— 360.1	14 50.80	54 29.35
	I. U.	11.7	17 23 52.61	135.78	67.89	24 26 30.9	— 274.9	14 53.37	54 38.79
29	I. L.	—	17 51 19.74	138.67	68.60	S. 25 12 21.7	— 182.5	14 56.44	54 50.06
	I. U.	12.7	18 19 18.58	141.03	69.17	25 39 06.1	— 84.0	14 59.95	55 02.92

MOON, 1928.

AT TRANSIT AT GREENWICH.

Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	°	° ' "	"	"	"
July 30	I. L.	—	18 47 41.79	142.71	69.55	S. 25 45 38.9	+ 19.2	15 03.81	55 17.11
	I. U.	13.8	19 16 20.46	143.60	69.75	25 31 15.6	+ 125.0	15 07.97	55 32.37
31	I. L.	—	19 45 04.90	143.67	69.75	S. 24 55 36.7	+ 231.4	15 12.34	55 48.42
	I. U.	14.8	20 13 45.48	142.97	69.56	23 58 49.3	+ 336.0	15 16.86	56 04.98
Aug. 1	I. L.	—	20 42 13.49	141.60	69.20	S. 22 41 28.5	+ 436.6	15 21.44	56 21.80
	II. U.	15.8	21 12 39.41	139.65	68.74	S. 21 04 35.7	+ 531.0	15 26.02	56 38.61
2	II. L.	—	21 40 22.38	137.48	68.18	19 09 34.1	+ 617.8	15 30.54	56 55.20
	II. U.	16.9	22 07 38.52	135.21	67.62	S. 16 58 04.8	+ 695.5	15 34.95	57 11.38
3	II. L.	—	22 34 27.93	133.05	67.08	14 32 03.0	+ 763.1	15 39.19	57 26.97
	II. U.	17.9	23 00 52.87	131.17	66.60	S. 11 53 32.7	+ 820.1	15 43.25	57 41.86
4	II. L.	—	23 26 57.55	129.69	66.25	9 04 44.6	+ 866.0	15 47.09	57 55.95
	II. U.	18.9	23 52 47.65	128.76	66.02	S. 6 07 53.2	+ 900.6	15 50.69	58 09.17
5	II. L.	—	00 18 30.18	128.44	65.97	S. 3 05 15.4	+ 923.7	15 54.04	58 21.48
	II. U.	20.0	00 44 12.98	128.81	66.09	N. 0 00 48.8	+ 935.0	15 57.14	58 32.86
6	II. L.	—	01 10 04.60	129.91	66.41	3 07 56.3	+ 934.2	15 59.98	58 43.28
	II. U.	21.0	01 36 13.89	131.76	66.91	N. 6 13 40.0	+ 920.9	16 02.56	58 52.73
7	II. L.	—	02 02 49.83	134.35	67.60	9 15 26.4	+ 894.6	16 04.86	59 01.17
	II. U.	22.0	02 30 01.00	137.63	68.46	N. 12 10 35.3	+ 854.6	16 06.87	59 08.56
8	II. L.	—	02 57 55.19	141.50	69.46	14 56 18.6	+ 800.2	16 08.57	59 14.81
	II. U.	23.1	03 26 38.73	145.82	70.55	N. 17 29 40.1	+ 730.9	16 09.94	59 19.84
9	II. L.	—	03 56 15.68	150.36	71.68	19 47 38.7	+ 646.3	16 10.94	59 23.51
	II. U.	24.1	04 26 46.99	154.82	72.74	N. 21 47 12.3	+ 546.8	16 11.53	59 25.67
10	II. L.	—	04 58 09.69	158.86	73.71	23 25 26.1	+ 433.3	16 11.66	59 26.16
	II. U.	25.1	05 30 16.31	162.08	74.46	N. 24 39 44.0	+ 307.9	16 11.30	59 24.81
11	II. L.	—	06 02 54.76	164.11	74.92	25 28 00.5	+ 173.7	16 10.39	59 21.47
	II. U.	26.2	06 35 49.24	164.71	75.04	N. 25 48 54.5	+ 34.9	16 08.90	59 16.00
12	II. L.	—	07 08 41.61	163.75	74.78	25 41 58.6	— 103.8	16 06.81	59 08.32
	II. U.	27.2	07 41 13.31	161.30	74.18	N. 25 07 43.0	— 237.6	16 04.11	58 58.41
13	II. L.	—	08 13 07.68	157.57	73.26	24 07 33.1	— 362.1	16 00.81	58 46.30
	II. U.	28.3	08 44 11.29	152.90	72.11	N. 22 43 40.7	— 474.2	15 56.94	58 32.11
14	II. L.	—	09 14 15.09	147.67	70.82	20 58 49.8	— 571.6	15 52.55	58 16.01
	I. U.	29.3	09 40 55.62	142.46	69.44	N. 18 56 03.4	— 653.4	15 47.72	57 58.28
15	I. L.	—	10 08 52.85	137.12	68.08	N. 16 38 30.4	— 719.5	15 42.53	57 39.21
	I. U.	1.0	10 35 47.72	132.10	66.79	14 09 15.2	— 770.6	15 37.07	57 19.16
16	I. L.	—	11 01 45.24	127.58	65.62	N. 11 31 11.3	— 807.8	15 31.44	56 58.53
	I. U.	2.0	11 26 52.03	123.66	64.61	8 46 57.5	— 832.5	15 25.77	56 37.71
17	I. L.	—	11 51 15.79	120.41	63.74	N. 5 58 56.2	— 846.0	15 20.16	56 17.10
	I. U.	3.0	12 15 04.55	117.84	63.07	3 09 13.9	— 849.5	15 14.71	55 57.11

MOON, 1928. AT TRANSIT AT GREENWICH.

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Date.	Limb and Transit.	Asc.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid Time of Sun at Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
Aug. 19	I. L.	d	h m s	s	s	° ' "	"	"	"
	I. U.	4.1	12 38 26.69	115.97	62.59	N. 0 19 42.5	-844.3	15 09.53	55 38.10
20	I. L.	-	13 01 30.47	114.78	62.30	S. 2 27 58.7	-831.3	15 04.72	55 20.44
	I. U.	5.1	13 24 23.99	114.25	62.19	S. 5 12 20.1	-811.2	15 00.36	55 04.44
21	I. L.	-	13 47 15.14	114.37	62.26	7 52 00.4	-784.5	14 56.53	54 50.38
	I. U.	6.1	14 10 11.42	115.11	62.49	S. 10 25 42.0	-751.5	14 53.29	54 38.49
22	I. L.	-	14 33 10.98	116.41	62.88	12 52 11.1	-712.4	14 50.70	54 28.98
	I. U.	7.1	14 56 47.41	118.25	63.41	S. 15 10 14.0	-667.1	14 48.80	54 22.00
23	I. L.	-	15 20 39.78	120.55	64.06	17 18 35.2	-615.4	14 47.62	54 17.67
	I. U.	8.2	15 45 02.23	123.35	64.80	S. 19 15 57.4	-557.2	14 47.18	54 16.07
24	I. L.	-	16 09 58.91	126.24	65.60	21 02 59.3	-492.0	14 47.50	54 17.23
	I. U.	9.2	16 35 32.64	129.40	66.44	S. 22 32 16.9	-419.7	14 48.57	54 21.15
25	I. L.	-	17 01 44.65	132.59	67.27	23 48 24.1	-340.2	14 50.37	54 27.76
	I. U.	10.2	17 28 34.33	135.65	68.05	S. 24 47 55.0	-253.7	14 52.88	54 36.98
26	I. L.	-	17 55 50.03	138.40	68.73	25 29 27.7	-160.6	14 56.07	54 48.67
	I. U.	11.3	18 23 54.06	140.68	69.27	S. 25 51 48.0	-61.8	14 59.87	55 02.64
27	I. L.	-	18 52 12.87	142.34	69.66	25 53 54.3	+41.4	15 04.23	55 18.65
	I. U.	12.3	19 20 47.57	143.31	69.87	S. 25 35 03.1	+147.5	15 09.08	55 36.43
28	I. L.	-	19 49 29.44	143.54	69.89	24 54 57.1	+254.3	15 14.31	55 55.64
	I. U.	13.4	20 18 09.84	143.07	69.74	S. 23 53 25.5	+359.8	15 19.84	56 15.93
29	I. L.	-	20 46 40.85	142.00	69.43	22 31 10.8	+461.8	15 25.55	56 36.89
	I. U.	14.4	21 14 56.07	140.47	69.02	S. 20 49 03.1	+558.3	15 31.33	56 58.11
30	I. L.	-	21 42 51.06	138.66	68.54	18 48 19.9	+647.5	15 37.07	57 19.17
	I. U.	15.4	22 10 23.54	136.75	68.04	S. 16 30 39.6	+727.6	15 42.64	57 39.63
31	H. U.	15.4	22 39 48.62	134.86	67.56	S. 13 57 57.7	+797.5	15 47.95	57 59.10
	H. L.	-	23 06 37.23	133.30	67.16	11 12 23.7	+856.2	15 52.88	58 17.21
Sept. 1	H. U.	16.5	23 33 09.36	132.13	66.86	S. 8 16 18.4	+902.7	15 57.35	58 33.63
	H. L.	-	23 59 30.38	131.46	66.70	5 12 10.7	+936.5	16 01.30	58 48.10
2	H. U.	17.5	00 25 46.85	131.38	66.70	S. 2 02 36.2	+957.0	16 04.66	59 00.43
	H. L.	-	00 52 06.15	131.95	66.86	N. 1 09 43.1	+963.9	16 07.40	59 10.51
3	H. U.	18.5	01 18 36.22	133.18	67.22	N. 4 22 01.3	+956.8	16 09.52	59 18.28
	H. L.	-	01 45 25.15	135.09	67.75	7 31 28.3	+935.3	16 11.02	59 23.78
4	H. U.	19.6	02 12 40.92	137.64	68.43	N. 10 35 10.1	+899.2	16 11.91	59 27.07
	H. L.	-	02 40 30.86	140.77	69.26	13 30 09.6	+848.2	16 12.25	59 28.30
5	H. U.	20.6	03 09 01.15	144.34	70.20	N. 16 13 27.6	+782.3	16 12.06	59 27.60
	H. L.	-	03 38 16.13	148.18	71.18	18 42 05.4	+701.6	16 11.39	59 25.16
6	H. U.	21.6	04 08 17.67	152.05	72.16	N. 20 53 48.0	+606.5	16 10.30	59 21.15
	H. L.	-	04 39 04.33	155.65	73.06	22 43 50.0	+498.4	16 08.83	59 15.74

MOON, 1928.

AT TRANSIT AT GREENWICH.

Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^g Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
Sept. 7	II. U.	22.7	d h m s	s	s	° ' "	"	"	"
	II. L.	—	05 10 31.01	158.66	73.79	N. 24 11 43.7	+378.9	16 07.01	59 09.07
8	II. U.	23.7	05 42 28.65	160.76	74.30	25 14 48.1	+250.6	16 04.89	59 01.27
	II. L.	—	06 14 44.73	161.70	74.51	N. 25 51 38.0	+117.1	16 02.48	58 52.44
9	II. U.	24.8	06 47 04.15	161.31	74.40	26 01 32.1	— 17.9	15 59.81	58 42.64
	II. L.	—	07 19 10.86	159.59	73.96	N. 25 44 37.6	—150.3	15 56.89	58 31.94
10	II. U.	25.8	07 50 49.55	156.67	73.23	25 01 49.5	—276.3	15 53.74	58 20.35
	II. L.	—	08 21 47.07	152.78	72.24	N. 23 54 44.9	—392.6	15 50.35	58 07.91
11	II. U.	26.8	08 51 53.68	148.24	71.10	22 25 34.7	—496.9	15 46.74	57 54.66
	II. L.	—	09 21 03.37	143.35	69.84	N. 20 36 52.5	—587.8	15 42.91	57 40.62
12	II. U.	27.9	09 49 13.80	138.41	68.55	18 31 23.9	—664.6	15 38.89	57 25.85
	II. L.	—	10 16 25.84	133.65	67.31	N. 16 11 58.2	—727.4	15 34.69	57 10.45
13	II. U.	28.9	10 42 42.90	129.27	66.13	13 41 20.4	—776.7	15 30.35	56 54.51
	II. L.	—	11 08 10.16	125.37	65.08	N. 11 02 08.3	—813.3	15 25.90	56 38.19
14	I. L.	—	11 30 45.68	122.18	64.18	N. 8 16 48.9	—838.1	15 21.40	56 21.66
	I. U.	0.5	11 54 54.78	119.44	63.44	5 27 37.6	—852.1	15 16.89	56 05.11
15	I. L.	—	12 18 34.86	117.34	62.88	N. 2 36 38.4	—856.2	15 12.44	55 48.77
	I. U.	1.5	12 41 53.36	115.86	62.49	S. 0 14 15.3	—851.3	15 08.11	55 32.88
16	I. L.	—	13 04 57.92	115.00	62.28	S. 3 03 19.7	—838.1	15 03.98	55 17.71
	I. U.	2.5	13 27 55.88	114.75	62.24	5 48 59.1	—817.2	15 00.11	55 03.50
17	I. L.	—	13 50 54.31	115.08	62.37	S. 8 29 43.8	—789.1	14 56.57	54 50.52
	I. U.	3.5	14 13 59.94	115.95	62.65	11 04 09.3	—754.0	14 53.44	54 39.03
18	I. L.	—	14 37 19.11	117.33	63.08	S. 13 30 53.9	—712.3	14 50.78	54 29.26
	I. U.	4.6	15 00 57.61	119.16	63.61	15 48 37.8	—663.9	14 48.65	54 21.45
19	I. L.	—	15 25 00.51	121.39	64.26	S. 17 56 01.7	—608.9	14 47.11	54 15.80
	I. U.	5.6	15 49 32.12	123.93	64.97	19 51 46.1	—547.3	14 46.21	54 12.49
20	I. L.	—	16 14 35.59	126.68	65.75	S. 21 34 31.2	—479.0	14 45.99	54 11.68
	I. U.	6.6	16 40 12.95	129.55	66.54	23 02 56.6	—404.1	14 46.48	54 13.50
21	I. L.	—	17 06 24.63	132.38	67.30	S. 24 15 42.9	—322.6	14 47.72	54 18.03
	I. U.	7.7	17 33 09.44	135.05	68.01	25 11 33.7	—234.9	14 49.70	54 25.32
22	I. L.	—	18 00 24.51	137.40	68.62	S. 25 49 17.5	—141.5	14 52.44	54 35.37
	I. U.	8.7	18 28 05.27	139.31	69.10	26 07 51.7	— 43.4	14 55.93	54 48.16
23	I. L.	—	18 56 05.80	140.68	69.44	S. 26 06 25.3	+ 58.3	15 00.12	55 03.57
	I. U.	9.7	19 24 19.16	141.44	69.61	25 44 23.4	+162.3	15 05.00	55 21.47
24	I. L.	—	19 52 38.02	141.60	69.62	S. 25 01 28.5	+266.8	15 10.50	55 41.64
	I. U.	10.8	20 20 55.31	141.19	69.49	23 57 43.9	+370.3	15 16.53	56 03.78
25	I. L.	—	20 49 04.78	140.32	69.23	S. 22 33 33.0	+470.9	15 23.01	56 27.57
	I. U.	11.8	21 17 01.59	139.11	68.89	20 49 40.9	+566.9	15 29.83	56 52.59

MOON, 1928.
AT TRANSIT AT GREENWICH.

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Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^s Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	s	° ' "	"	"	"
Sept. 26	I. L.	—	21 44 42.66	137.72	68.50	S. 18 47 12.2	+656.7	15 36.85	57 18.35
	I. U.	12.9	22 12 06.79	136.31	68.10	16 27 30.9	+738.8	15 43.93	57 44.34
27	I. L.	—	22 39 14.76	135.05	67.75	S. 13 52 18.2	+811.7	15 50.90	58 09.95
	I. U.	13.9	23 06 09.12	134.07	67.48	11 03 31.4	+874.2	15 57.63	58 34.63
28	I. L.	—	23 32 54.02	133.50	67.31	S. 8 03 23.9	+925.0	16 03.93	58 57.77
	I. U.	14.9	23 59 35.05	133.43	67.29	4 54 23.1	+962.9	16 09.65	59 18.76
29	II. L.	—	00 28 33.56	133.99	67.43	S. 1 39 10.0	+986.8	16 14.65	59 37.11
30	II. U.	16.0	00 55 27.83	135.17	67.73	N. 1 39 21.1	+995.7	16 18.80	59 52.36
	II. L.	—	01 22 40.15	137.00	68.20	4 58 04.4	+988.7	16 22.02	60 04.15
Oct. 1	II. U.	17.0	01 50 18.37	139.47	68.87	N. 8 13 43.7	+965.0	16 24.23	60 12.27
	II. L.	—	02 18 29.75	142.52	69.67	11 22 55.0	+924.0	16 25.41	60 16.62
2	II. U.	18.0	02 47 20.60	146.03	70.58	N. 14 22 09.1	+865.4	16 25.58	60 17.24
	II. L.	—	03 16 55.55	149.83	71.56	17 07 56.8	+789.6	16 24.78	60 14.30
3	II. U.	19.1	03 47 16.71	153.69	72.54	N. 19 36 53.4	+697.1	16 23.08	60 08.07
	II. L.	—	04 18 23.03	157.30	73.46	21 45 47.0	+589.4	16 20.59	59 58.92
4	II. U.	20.1	04 50 09.62	160.34	74.24	N. 23 31 47.4	+468.7	16 17.42	59 47.27
	II. L.	—	05 22 27.56	162.47	74.78	24 52 35.4	+337.9	16 13.68	59 33.55
5	II. U.	21.2	05 55 04.26	163.42	75.04	N. 25 46 33.1	+201.0	16 09.50	59 18.22
	II. L.	—	06 27 44.39	163.02	74.96	26 12 50.6	+62.0	16 05.00	59 01.70
6	II. U.	22.2	07 00 11.48	161.26	74.54	N. 26 11 30.4	— 74.6	16 00.29	58 44.41
	II. L.	—	07 32 09.66	158.24	73.81	25 43 24.4	— 205.0	15 55.46	58 26.66
7	II. U.	23.2	08 03 25.33	154.22	72.83	N. 24 50 08.2	— 325.9	15 50.58	58 08.75
	II. L.	—	08 33 48.28	149.51	71.64	23 33 50.2	— 435.0	15 45.71	57 50.89
8	II. U.	24.3	09 03 12.16	144.44	70.35	N. 21 57 00.6	— 531.0	15 40.90	57 33.25
	II. L.	—	09 31 34.49	139.30	69.02	20 02 19.9	— 613.5	15 36.19	57 15.94
9	II. U.	25.3	09 58 56.05	134.35	67.70	N. 17 52 31.2	— 682.5	15 31.59	56 59.76
	II. L.	—	10 25 20.26	129.77	66.45	15 30 12.6	— 738.6	15 27.11	56 42.62
10	II. U.	26.3	10 50 52.43	125.69	65.34	N. 12 57 54.4	— 782.5	15 22.77	56 26.68
	II. L.	—	11 15 39.06	122.18	64.36	10 17 57.0	— 815.2	15 18.56	56 11.24
11	II. U.	27.4	11 39 47.38	119.31	63.54	N. 7 32 31.2	— 837.4	15 14.50	55 56.32
	II. L.	—	12 03 25.03	117.07	62.89	4 43 37.4	— 850.0	15 10.58	55 41.95
12	II. U.	28.4	12 26 39.59	115.47	62.43	N. 1 53 08.0	— 853.5	15 06.82	55 28.16
	II. L.	—	12 49 38.69	114.49	62.14	S. 0 57 11.9	— 848.5	15 03.24	55 15.00
13	II. U.	29.4	13 12 29.63	114.10	62.02	S. 3 45 43.0	— 835.4	14 59.85	55 02.54
14	I. L.	—	13 33 15.29	114.27	62.08	S. 6 37 50.2	— 814.6	14 56.67	54 50.90
	I. U.	0.9	13 56 10.21	114.97	62.29	9 11 02.3	— 786.2	14 53.75	54 40.18
15	I. L.	—	14 19 16.54	116.17	62.64	S. 11 44 50.1	— 750.5	14 51.11	54 30.50
	I. U.	1.9	14 42 39.96	117.81	63.12	14 10 46.3	— 707.6	14 48.81	54 22.03

MOON, 1928.

AT TRANSIT AT GREENWICH.

Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^s Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	s	° ' "	"	"	"
Oct. 16	I. L.	—	15 06 25.45	119.83	63.70	S. 16 27 24.1	—657.5	14 46.87	54 14.93
	I. U.	2.9	15 30 37.17	122.17	64.38	18 33 17.8	—600.3	14 45.36	54 09.37
17	I. L.	—	15 55 18.30	124.72	65.10	S. 20 27 02.5	—536.0	14 44.31	54 05.52
	I. U.	3.9	16 20 30.81	127.38	65.85	22 07 14.7	—464.9	14 43.78	54 03.59
18	I. L.	—	16 46 15.28	130.02	66.60	S. 23 32 33.9	—387.2	14 43.82	54 03.71
	I. U.	5.0	17 12 30.78	132.53	67.29	24 41 43.4	—303.4	14 44.46	54 06.07
19	I. L.	—	17 39 14.82	134.76	67.90	S. 25 33 33.4	—214.1	14 45.75	54 10.79
	I. U.	6.0	18 06 23.37	136.59	68.42	26 07 03.0	—120.1	14 47.71	54 18.01
20	I. L.	—	18 33 51.10	137.94	68.79	S. 26 21 22.6	—22.6	14 50.39	54 27.83
	I. U.	7.0	19 01 31.71	138.74	69.01	26 15 56.8	+77.2	14 53.79	54 40.30
21	I. L.	—	19 29 18.55	138.97	69.08	S. 25 50 25.4	+178.1	14 57.91	54 55.44
	I. U.	8.1	19 57 05.02	138.69	69.01	25 04 44.9	+278.5	15 02.75	55 13.20
22	I. L.	—	20 24 45.35	137.96	68.82	S. 23 59 08.0	+377.2	15 08.28	55 33.51
	I. U.	9.1	20 52 14.78	136.90	68.54	22 34 04.2	+472.8	15 14.46	55 56.20
23	I. L.	—	21 19 30.28	135.66	68.19	S. 20 50 17.4	+564.2	15 21.23	56 21.04
	I. U.	10.2	21 46 30.46	134.38	67.83	18 48 45.3	+650.2	15 28.50	56 47.72
24	I. L.	—	22 13 15.85	133.21	67.51	S. 16 30 39.2	+729.7	15 36.17	57 15.86
	I. U.	11.2	22 39 48.65	132.31	67.24	13 57 22.6	+801.7	15 44.10	57 44.96
25	I. L.	—	23 06 12.76	131.79	67.07	S. 11 10 32.1	+865.2	15 52.14	58 14.47
	I. U.	12.2	23 32 33.47	131.76	67.04	8 11 58.3	+918.7	16 00.11	58 43.73
26	I. L.	—	23 58 57.26	132.31	67.16	S. 5 03 47.3	+961.1	16 07.82	59 12.06
	I. U.	13.3	00 25 31.61	133.53	67.45	S. 1 48 22.3	+990.8	16 15.08	59 38.69
27	I. L.	—	00 52 24.70	135.44	67.93	N. 1 31 34.7	+1006.2	16 21.67	60 02.86
	I. U.	14.3	01 19 45.11	138.08	68.60	4 53 01.9	+1005.6	16 27.39	60 23.86
28	I. L.	—	01 47 41.40	141.42	69.45	N. 8 12 37.6	+987.3	16 32.06	60 41.03
	II. U.	15.3	02 18 42.47	145.56	70.45	11 26 41.3	+950.0	16 35.55	60 53.80
29	II. L.	—	02 48 15.51	150.02	71.57	N. 14 31 17.5	+892.6	16 37.72	61 01.78
30	II. U.	16.4	03 18 43.89	154.74	72.75	N. 17 22 21.3	+814.6	16 38.53	61 04.77
	II. L.	—	03 50 08.88	159.39	73.90	19 55 47.7	+716.5	16 37.98	61 02.74
31	II. U.	17.4	04 22 27.46	163.60	74.94	N. 22 07 45.0	+600.0	16 36.11	60 55.88
	II. L.	—	04 55 31.75	166.93	75.78	23 54 47.1	+468.0	16 33.03	60 44.57
Nov. 1	II. U.	18.5	05 29 08.72	168.98	76.30	N. 25 14 12.8	+324.7	16 28.87	60 29.30
	II. L.	—	06 03 01.00	169.44	76.45	26 04 17.0	+175.4	16 23.80	60 10.71
2	II. U.	19.5	06 36 48.58	168.19	76.20	N. 26 24 22.1	+25.9	16 18.02	59 49.49
	II. L.	—	07 10 11.07	165.29	75.55	26 14 58.2	—118.5	16 11.72	59 26.36
3	II. U.	20.5	07 42 50.17	161.02	74.56	N. 25 37 36.5	—253.1	16 05.08	59 01.99
	II. L.	—	08 14 31.51	155.74	73.29	24 34 35.9	—374.6	15 58.28	58 37.01

MOON, 1928.
AT TRANSIT AT GREENWICH.

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Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^e Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	s	° ' "	"	"	"
Nov. 4	II. U.	21·6	08 45 05·65	149·89	71·86	N. 23 08 46·1	—481·1	15 51·45	58 11·96
	II. L.	—	09 14 28·16	143·87	70·35	21 23 11·4	—572·1	15 44·73	57 47·31
5	II. U.	22·6	09 42 39·02	138·00	68·84	N. 19 20 56·9	—647·9	15 38·22	57 23·41
	II. L.	—	10 09 41·71	132·54	67·39	17 04 59·5	—709·4	15 31·99	57 00·54
6	II. U.	23·7	10 35 42·11	127·64	66·08	N. 14 38 02·7	—758·0	15 26·10	56 38·91
	II. L.	—	11 00 47·69	123·41	64·91	12 02 34·8	—794·8	15 20·57	56 18·63
7	II. U.	24·7	11 25 06·75	119·89	63·91	N. 9 20 48·7	—821·2	15 15·44	55 59·77
	II. L.	—	11 48 48·00	117·10	63·11	6 34 43·8	—838·1	15 10·70	55 42·38
8	II. U.	25·7	12 12 00·11	115·03	62·49	N. 3 46 08·6	—846·4	15 06·35	55 26·43
	II. L.	—	12 34 51·63	113·66	62·07	N. 0 56 42·2	—846·7	15 02·39	55 11·90
9	II. U.	26·7	12 57 30·71	112·96	61·83	S. 1 52 01·9	—839·4	14 58·81	54 58·74
	II. L.	—	13 20 05·21	112·89	61·78	4 38 34·7	—824·8	14 55·59	54 46·92
10	II. U.	27·8	13 42 42·49	113·42	61·91	S. 7 21 29·1	—803·0	14 52·72	54 36·38
	II. L.	—	14 05 29·35	114·48	62·17	9 59 18·9	—774·1	14 50·18	54 27·08
11	II. U.	28·8	14 28 32·07	116·05	62·60	S. 12 30 37·4	—737·8	14 47·99	54 19·01
	II. L.	—	14 51 56·20	118·04	63·14	14 53 57·0	—694·2	14 46·12	54 12·16
12	I. U.	0·1	15 13 38·85	120·27	63·77	S. 17 07 48·3	—643·1	14 44·59	54 06·55
13	I. L.	—	15 37 57·34	122·85	64·49	S. 19 10 41·5	—584·5	14 43·40	54 02·20
	I. U.	1·1	16 02 47·88	125·59	65·23	21 01 06·5	—518·4	14 42·58	53 59·18
14	I. L.	—	16 28 11·44	128·33	65·99	S. 22 37 35·1	—445·1	14 42·14	53 57·55
	I. U.	2·2	16 54 07·36	130·96	66·71	23 58 42·6	—365·0	14 42·11	53 57·43
15	I. L.	—	17 20 33·29	133·31	67·35	S. 25 03 11·6	—278·8	14 42·51	53 58·92
	I. U.	3·2	17 47 25·11	135·25	67·89	25 49 53·9	—187·4	14 43·39	54 02·14
16	I. L.	—	18 14 37·24	136·67	68·29	S. 26 17 54·7	— 92·1	14 44·77	54 07·21
	I. U.	4·2	18 42 02·89	137·49	68·54	26 26 34·8	+ 5·8	14 46·69	54 14·26
17	I. L.	—	19 09 34·66	137·69	68·63	S. 26 15 32·2	+104·7	14 49·18	54 23·41
	I. U.	5·3	19 37 05·19	137·30	68·56	25 44 43·0	+203·2	14 52·28	54 34·76
18	I. L.	—	20 04 27·73	136·38	68·35	S. 24 54 21·8	+299·9	14 55·99	54 48·40
	I. U.	6·3	20 31 36·76	135·07	68·04	23 44 58·2	+393·4	15 00·35	55 04·41
19	I. L.	—	20 58 28·33	133·50	67·65	S. 22 17 16·1	+482·8	15 05·35	55 22·76
	I. U.	7·3	21 25 00·44	131·85	67·23	20 32 10·6	+567·2	15 10·99	55 43·44
20	I. L.	—	21 51 12·95	130·26	66·82	S. 18 30 45·9	+645·9	15 17·23	56 06·36
	I. U.	8·4	22 17 07·69	128·91	66·46	16 14 13·3	+718·4	15 24·05	56 31·38
21	I. L.	—	22 42 48·17	127·91	66·19	S. 13 43 50·7	+784·2	15 31·37	56 58·26
	I. U.	9·4	23 08 19·44	127·39	66·04	11 01 02·8	+842·5	15 39·12	57 26·68
22	I. L.	—	23 33 47·94	127·46	66·05	S. 8 07 22·5	+892·8	15 47·17	57 56·23
	I. U.	10·4	23 59 21·26	128·21	66·22	5 04 33·1	+933·9	15 55·39	58 26·43

MOON, 1928.

AT TRANSIT AT GREENWICH.

Date.	Limb and Transit.	Age.	Apparent Right Ascension of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^g Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
		d	h m s	s	"	° ' "	"	"	"
Nov. 23	I. L.	—	00 25 07.94	129.70	66.59	S. 1 54 31.2	+964.6	16 03.62	58 56.63
	I. U.	11.5	00 51 17.22	131.99	67.17	N. 1 20 29.9	+983.4	16 11.67	59 26.19
24	I. L.	—	01 17 58.94	135.11	67.97	N. 4 37 56.1	+988.5	16 19.33	59 54.30
	I. U.	12.5	01 45 23.11	139.06	68.96	7 54 50.6	+977.7	16 26.38	60 20.15
25	I. L.	—	02 13 39.37	143.78	70.13	N. 11 07 50.3	+949.0	16 32.58	60 42.91
	I. U.	13.5	02 42 56.32	149.15	71.46	14 13 07.0	+900.2	16 37.72	61 01.78
26	I. L.	—	03 13 20.52	154.94	72.87	N. 17 06 30.0	+829.8	16 41.60	61 16.04
	I. U.	14.6	03 44 55.20	160.83	74.29	19 43 34.1	+737.0	16 44.08	61 25.15
27	II. L.	—	04 20 10.08	166.55	75.60	N. 21 59 52.3	+622.4	16 45.05	61 28.69
28	II. U.	15.6	04 53 57.42	171.13	76.70	N. 23 51 14.6	+488.2	16 44.46	61 26.54
	II. L.	—	05 28 31.49	174.25	77.45	25 14 10.4	+338.9	16 42.35	61 18.78
29	II. U.	16.7	06 03 31.95	175.46	77.77	N. 26 06 11.3	+180.3	16 38.80	61 05.74
	II. L.	—	06 38 34.33	174.55	77.59	26 26 08.5	+19.6	16 33.96	60 47.98
30	II. U.	17.7	07 13 13.12	171.57	76.94	N. 26 14 20.2	—136.1	16 28.02	60 26.20
	II. L.	—	07 47 05.11	166.83	75.86	25 32 26.1	—280.5	16 21.21	60 01.22
Dec. 1	II. U.	18.8	08 19 52.04	160.82	74.47	N. 24 23 09.2	—409.3	16 13.77	59 33.90
	II. L.	—	08 51 22.00	154.10	72.86	22 49 53.7	—520.1	16 05.92	59 05.07
2	II. U.	19.8	09 21 29.59	147.18	71.17	N. 20 56 21.1	—612.2	15 57.87	58 35.52
	II. L.	—	09 50 14.99	140.46	69.49	18 46 12.2	—686.4	15 49.82	58 05.96
3	II. U.	20.8	10 17 42.60	134.25	67.89	N. 16 22 53.1	—744.2	15 41.92	57 36.98
	II. L.	—	10 43 59.69	128.73	66.45	13 49 29.3	—787.5	15 34.31	57 09.06
4	II. U.	21.9	11 09 15.18	124.00	65.16	N. 11 08 43.2	—818.2	15 27.10	56 42.59
	II. L.	—	11 33 38.89	120.10	64.09	8 22 55.7	—838.0	15 20.36	56 17.86
5	II. U.	22.9	11 57 20.83	117.03	63.22	N. 5 34 07.9	—848.5	15 14.15	55 55.07
	II. L.	—	12 20 50.90	114.78	62.57	N. 2 44 05.7	—850.6	15 08.51	55 34.34
6	II. U.	23.9	12 43 18.66	113.31	62.13	S. 0 05 37.3	—845.4	15 03.44	55 15.74
	II. L.	—	13 05 53.20	112.57	61.88	2 53 35.4	—833.2	14 58.96	54 59.28
7	II. U.	25.0	13 28 23.14	112.53	61.84	S. 5 38 28.4	—814.5	14 55.05	54 44.94
	II. L.	—	13 50 56.50	113.13	61.97	8 18 58.4	—789.4	14 51.70	54 32.64
8	II. U.	26.0	14 13 40.71	114.33	62.26	S. 10 53 47.5	—757.7	14 48.89	54 22.33
	II. L.	—	14 36 42.57	116.06	62.71	13 21 36.7	—719.3	14 46.59	54 13.90
9	II. U.	27.0	15 00 07.99	118.25	63.28	S. 15 41 03.3	—673.9	14 44.78	54 07.25
	II. L.	—	15 24 01.95	120.80	63.95	17 50 41.9	—621.3	14 43.42	54 02.27
10	II. U.	28.0	15 48 28.20	123.61	64.68	S. 19 49 03.9	—561.1	14 42.50	53 58.88
	II. L.	—	16 13 29.06	126.54	65.45	21 34 39.1	—493.5	14 41.98	53 56.99
11	II. U.	29.1	16 39 05.15	129.45	66.21	S. 23 05 57.4	—418.4	14 41.86	53 56.52
	II. L.	—	17 05 15.18	132.17	66.92	24 21 31.8	—336.3	14 42.11	53 57.45

MOON, 1928. AT TRANSIT AT GREENWICH.

447

Date.	Limb an l. Transit.	Age.	Apparent Right Ascen- sion of Limb.	Var. of R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^s Merid.	Apparent Declination of Centre.	Var. of Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par
Dec. 12	I. U.	0.3	d h m s 17 29 40.77	s 134.44	s 67.55	S. 25 20 02.7	—247.9	14 42.72	53 59.67
13	I. L.	—	17 56 45.86	136.31	68.03	S. 26 00 20.9	—154.4	14 43.69	54 03.25
	I. U.	1.3	18 24 09.71	137.55	68.36	26 21 33.5	—57.2	14 45.03	54 08.15
14	I. L.	—	18 51 44.26	138.09	68.52	S. 26 23 05.7	+42.0	14 46.74	54 14.43
	I. U.	2.4	19 19 20.94	137.90	68.49	26 04 43.6	+141.5	14 48.83	54 22.12
15	I. L.	—	19 46 51.27	137.05	68.31	S. 25 26 35.4	+239.4	14 51.33	54 31.28
	I. U.	3.4	20 14 07.87	135.63	67.97	24 29 09.4	+334.2	14 54.24	54 41.96
16	I. L.	—	20 41 04.75	133.79	67.53	S. 23 13 11.8	+424.5	14 57.59	54 54.27
	I. U.	4.4	21 07 37.97	131.72	67.03	21 39 43.4	+509.2	15 01.40	55 08.26
17	I. L.	—	21 33 45.70	129.58	66.50	S. 19 49 55.5	+587.6	15 05.69	55 23.98
	I. U.	5.5	21 59 28.24	127.55	65.99	17 45 06.9	+659.3	15 10.45	55 41.47
18	I. L.	—	22 24 47.87	125.78	65.55	S. 15 26 40.4	+723.9	15 15.70	56 00.74
	I. U.	6.5	22 49 48.63	124.42	65.21	12 56 02.1	+781.3	15 21.43	56 21.76
19	I. L.	—	23 14 36.16	123.59	65.00	S. 10 14 40.5	+831.1	15 27.61	56 44.41
	I. U.	7.5	23 39 17.31	123.38	64.96	7 24 07.0	+873.2	15 34.20	57 08.63
20	I. L.	—	00 04 00.10	123.88	65.10	S. 4 25 57.8	+907.0	15 41.14	57 34.13
	I. U.	8.6	00 28 53.47	125.15	65.44	S. 1 21 56.1	+931.7	15 48.38	58 00.67
21	I. L.	—	00 54 07.14	127.27	66.00	N. 1 46 03.6	+946.5	15 55.78	58 27.83
	I. U.	9.6	01 19 51.38	130.26	66.79	4 55 53.0	+949.7	16 03.21	58 55.14
22	I. L.	—	01 46 16.88	134.14	67.79	N. 8 05 04.6	+939.9	16 10.54	59 22.02
	I. U.	10.6	02 13 34.25	138.90	69.00	11 10 48.6	+914.8	16 17.57	59 47.82
23	I. L.	—	02 41 53.55	144.44	70.38	N. 14 09 50.1	+872.4	16 24.11	60 11.83
	I. U.	11.7	03 11 23.26	150.60	71.90	16 58 27.9	+810.5	16 29.95	60 33.26
24	I. L.	—	03 42 09.27	157.10	73.46	N. 19 32 38.5	+727.5	16 34.88	60 51.36
	I. U.	12.7	04 14 13.20	163.51	74.98	21 48 02.8	+622.8	16 38.71	61 05.42
25	I. L.	—	04 47 31.01	169.30	76.32	N. 23 40 22.5	+497.0	16 41.26	61 14.79
	I. U.	13.8	05 21 51.65	173.88	77.36	25 05 40.0	+353.1	16 42.41	61 18.99
26	I. L.	—	05 56 56.97	176.65	77.98	N. 26 00 44.6	+195.9	16 42.07	61 17.75
27	II. U.	14.8	06 34 58.99	177.22	78.11	N. 26 23 37.4	+32.4	16 40.24	61 11.03
	II. L.	—	07 10 17.13	175.40	77.71	26 13 48.4	—129.6	16 36.97	60 59.03
28	II. U.	15.8	07 45 00.44	171.48	76.82	N. 25 32 20.3	—282.9	16 32.38	60 42.18
	II. L.	—	08 18 46.22	165.91	75.54	24 21 37.4	—421.3	16 26.63	60 21.07
29	II. U.	16.9	08 51 18.06	159.27	73.98	N. 22 45 03.7	—540.9	16 19.92	59 56.46
	II. L.	—	09 22 26.89	152.17	72.28	20 46 36.6	—640.1	16 12.49	59 29.17
30	II. U.	17.9	09 52 10.19	145.10	70.55	N. 18 30 21.8	—719.0	16 04.55	59 00.05
	II. L.	—	10 20 30.76	138.43	68.88	16 00 15.5	—779.0	15 56.34	58 29.90
31	II. U.	19.0	10 47 35.13	132.43	67.35	N. 13 19 52.8	—822.1	15 48.05	57 59.48
	II. L.	—	11 13 32.15	127.22	65.99	10 32 23.2	—850.6	15 39.87	57 29.46

ECLIPSES, 1928.

In the year 1928 there will be five eclipses, three of the Sun and two of the Moon.

I.—*A Total Eclipse of the Sun*, May 19, 1928, invisible at Greenwich.

ELEMENTS OF THE ECLIPSE.

Greenwich Mean Time of ϕ in Right Ascension, May 19^d 12^h 49^m 32^s·6

						h	m	s
Sun and Moon's Right Ascension	..	..	..	..	..	3	44	05·74
Hourly Motions	..	..	..	..	..	9 ^s ·97	and	153 ^s ·05
Sun's Declination	..	..	..	..	..	N. 19	47	02 ["] ·0
Hourly Motion	..	..	..	..	..	N. 0	32	·1
Moon's Declination	..	..	..	..	..	N. 18	42	14·2
Hourly Motion	..	..	..	..	..	N. 11	47	·8
Sun's Equatorial Horizontal Parallax	..	..	..	..	..			8·7
Sun's True Semidiameter	..	..	..	..	..		15	48·2
Moon's Equatorial Horizontal Parallax	..	..	..	..	..		61	20·2
Moon's True Semidiameter	..	..	..	..	..		16	42·0

CIRCUMSTANCES OF THE ECLIPSE.

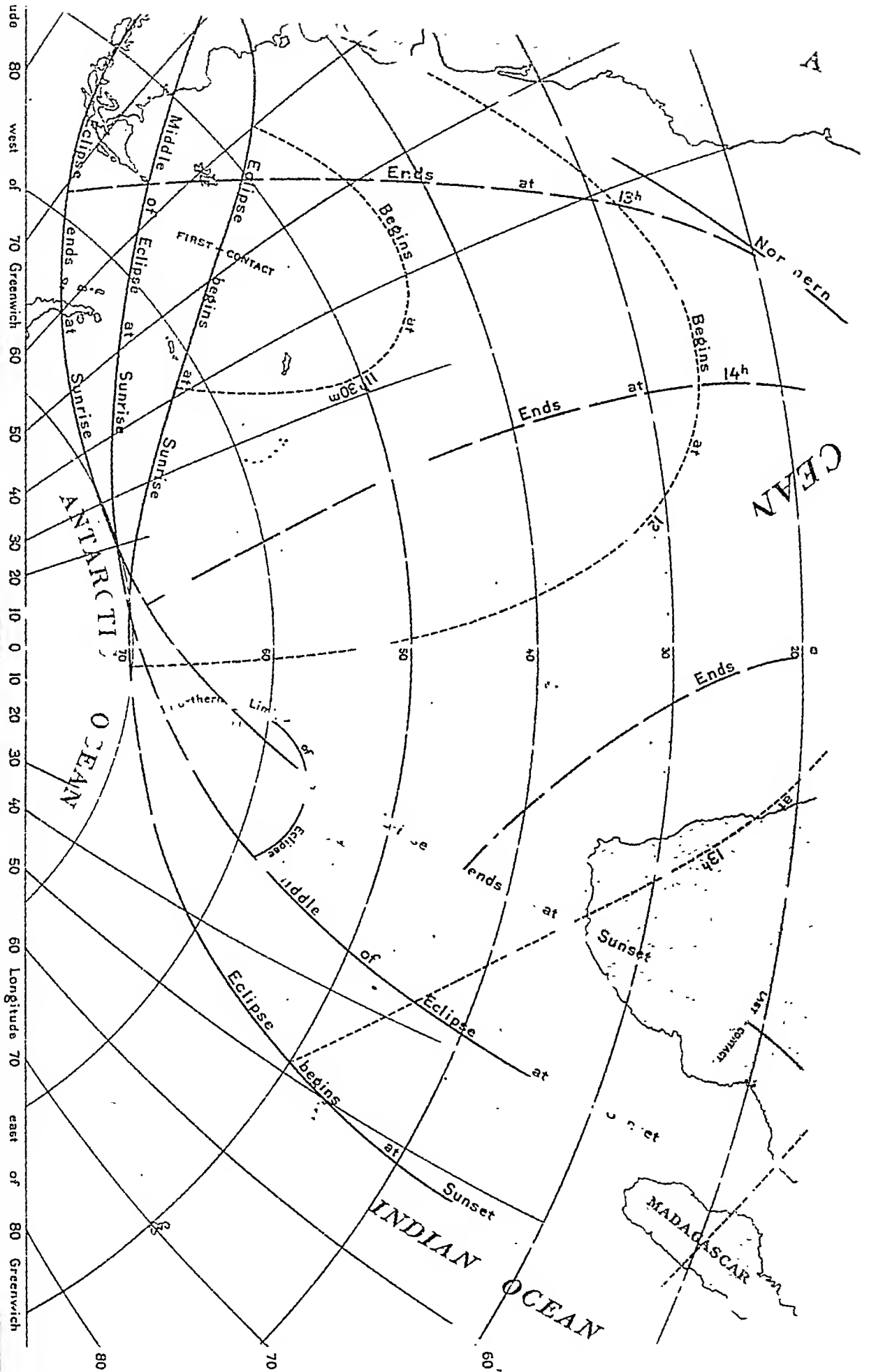
			Greenwich Mean Time.	Longitude from Greenwich.	Latitude.
			d u m	° ' "	° ' "
Eclipse begins	..	May	19 11 25·4	52 17 W.	54 17 S.
Total Eclipse begins	..	"	19 13 11·9	12 18 E.	67 11 S.
Greatest Eclipse	..	"	19 13 24·0	22 25 E.	63 17 S.
Total Eclipse ends	..	"	19 13 36·2	29 14 E.	58 24 S.
Eclipse ends	..	"	19 15 22·6	30 20 E.	21 23 S.

PATH OF TOTAL PHASE DURING THE ECLIPSE OF THE SUN,
MAY 19, 1928.

Greenwich Mean Time	Northern Limit.		Central Line.		Southern Limit.		Duration of Total Phase on Central Line.
	Latitude.	Longitude from Greenwich.	Latitude.	Longitude from Greenwich.	Latitude.	Longitude from Greenwich.	
Limits.	° ' "	° ' "					
13 ^h 15 ^m	S. 67 11	E. 12 18					
20	62 09·5	9 43·1					
25	59 09·9	11 33·7					
30	57 21·0	14 24·0					
35	56 22·3	18 10·3					
40	56 42·7	24 18·4					
Limits.	S. 58 24	E. 29 14					

Note.—Axis of shadow does not touch the earth.

Note: The hours of beginning and ending are expressed in Greenwich Mean Time.



BESSELIAN ELEMENTS OF THE TOTAL ECLIPSE OF THE SUN
MAY 19, 1928.

Greenwich Mean Time.	Co-ordinates of Centre of Shadow on Fundamental Plane.		Direction of Axis of Shadow			Radius of Penumbra and Umbra on Fundamental Plane.	
	x	y	Log sin d	Log cos d	μ	l_1	l_2
h m							
11 20	-0.82625	-1.33359	+9.52931	-9.97361	350 54.9	+0.53108	-0.01476
30	0.73399	1.30290	9.52934	9.97360	353 24.9	0.53109	0.01475
40	0.64172	1.27221	9.52937	9.97360	355 54.9	0.53110	0.01474
50	0.54945	1.24153	9.52940	9.97359	358 25.0	0.53111	0.01473
12 00	-0.45718	-1.21085	+9.52943	+9.97359	0 55.0	+0.53112	-0.01472
10	0.36491	1.18018	9.52946	9.97359	3 25.0	0.53113	0.01471
20	0.27263	1.14951	9.52949	9.97358	5 55.0	0.53114	0.01471
30	0.18035	1.11884	9.52952	9.97358	8 25.0	0.53114	0.01470
40	-0.08807	1.08818	9.52955	9.97357	10 55.0	0.53115	0.01469
50	+0.00422	1.05752	9.52958	9.97357	13 25.0	0.53116	0.01469
13 00	+0.09651	-1.02687	+9.52961	+9.97357	15 55.0	+0.53116	-0.01468
10	0.18880	0.99622	9.52964	9.97356	18 25.0	0.53116	0.01468
20	0.28109	0.96558	9.52967	9.97356	20 55.0	0.53117	0.01468
30	0.37339	0.93494	9.52970	9.97355	23 25.0	0.53117	0.01467
40	0.46568	0.90430	9.52973	9.97355	25 55.1	0.53117	0.01467
50	0.55798	0.87367	9.52976	9.97355	28 25.1	0.53117	0.01467
14 00	+0.65027	-0.84305	+9.52979	+9.97354	30 55.1	+0.53118	-0.01467
10	0.74257	0.81243	9.52982	9.97354	33 25.1	0.53118	0.01467
20	0.83487	0.78181	9.52985	9.97354	35 55.1	0.53118	0.01467
30	0.92716	0.75120	9.52988	9.97353	38 25.1	0.53117	0.01467
40	1.01946	0.72059	9.52991	9.97353	40 55.1	0.53117	0.01467
50	1.11175	0.68999	9.52994	9.97352	43 25.1	0.53117	0.01468
15 00	+1.20405	-0.65939	+9.52997	+9.97352	45 55.1	+0.53116	-0.01468
10	1.29634	0.62880	9.53000	9.97352	48 25.1	0.53116	0.01468
20	1.38863	0.59822	9.53003	9.97351	50 55.2	0.53116	0.01469
30	+1.48092	-0.56764	+9.53006	+9.97351	53 25.2	+0.53115	-0.01469

Greenwich Mean Time.	Log x' for 1 Minute.	Log y' for 1 Minute	Log μ' for 1 Minute.	Log Tangents of Angles of Cones.	
				Penumbra.	Umbra.
h m					
11 00	+7.9650	+7.4871	+1.1761	+7.66460	+7.66243
12 00	7.9651	7.4868	1.1761	7.66460	7.66243
13 00	7.9651	7.4865	1.1761	7.66459	7.66242
14 00	7.9652	7.4861	1.1761	7.66459	7.66242
15 00	7.9652	7.4856	1.1761	7.66459	7.66242
16 00	+7.9651	+7.4851	+1.1761	+7.66458	+7.66241

ECLIPSES, 1928.

At CAPE OF GOOD HOPE, a Partial Eclipse is visible, Magnitude 0.76.

					d	h	m	
Begins	..	..	..	May	19	12	50	} Greenwich Mean Time.
Greatest Phase	..	..	..	„	19	14	03	
Ends	..	...	..	..	„	19	15	10

Angle from North Point of First Contact	..	..	..	236°.
Angle from Vertex of First Contact	..	..	..	86°.
Angle from North Point of Last Contact	..	..	...	90°.
Angle from Vertex of Last Contact	..	..	..	320°.

At JOHANNESBURG, a Partial Eclipse is visible, Magnitude 0.57.

					d	h	m	
Begins	..	.	..	May	19	13	20	} Greenwich Mean Time.
Greatest Phase	..	..	..	„	19	14	24	
Ends	..	..	..	„	19	15	21	

Angle from North Point of First Contact	..	..	..	228°.
Angle from Vertex of First Contact	..	..	..	96°.
Angle from North Point of Last Contact	..	..	..	104°.
Angle from Vertex of Last Contact	..	..	..	346°.

II.—*A Total Eclipse of the Moon*, June 3, 1928, invisible at Greenwich; the beginning visible generally in the western part of South America, the western part of North America, the Pacific Ocean, Australia, and the eastern border of Asia; the ending visible generally in the Pacific Ocean, Australia, and the eastern part of Asia.

ELEMENTS OF THE ECLIPSE.

Greenwich Mean Time of \varnothing in Right Ascension, June 3^d 12^h 18^m 12^s.1

						^h	^m	^s
Sun's Right Ascension..	..	..	..	..	..	04	44	46.10
Hourly Motion ..	..	..	..	..	..			10.26
Moon's Right Ascension	..	..	..	..	..	16	44	46.10
Hourly Motion ..	..	..	..	..	..			126.33
						0		
Sun's Declination	..	..	..	..	..	N. 22	19	23.0
Hourly Motion ..	..	..	..	..	..	N. 0		18.4
Moon's Declination	..	..	..	..	..	S. 22	37	03.7
Hourly Motion ..	..	..	..	..	..	S. 6		32.8
Sun's Equatorial Horizontal Parallax	..	..						8.7
Sun's True Semidiameter	..	..	..	..	..		15	45.9
Moon's Equatorial Horizontal Parallax	..	..					54	13.4
Moon's True Semidiameter	..	..	..	..	..		14	45.8

CIRCUMSTANCES OF THE ECLIPSE.

		^d	^h	^m	
Moon enters Penumbra ..	June	3	09	05.2	} Greenwich Mean Time.
Moon enters Umbra ..	..	3	10	17.6
Total Eclipse begins	..	3	11	31.3	
Middle of the Eclipse	..	3	12	09.4	
Total Eclipse ends	..	3	12	47.6	
Moon leaves Umbra ..	..	3	14	01.6
Moon leaves Penumbra	3	15	14.5	

Contacts of Umbra with Moon's Limb.	Angles of Position from the North Point.	The Moon being in the Zenith in Longitude from Greenwich, and in Latitude	
First	85° to E.	155° 53' W.	22° 24' S.
Last	59 to W.	149 56 E.	22 48 S.

Magnitude of the Eclipse = 1.247 (Moon's Diameter = 1.0).

ECLIPSES, 1928.

III.—A Partial Eclipse of the Sun, June 17, 1928, invisible at Greenwich.

ELEMENTS OF THE ECLIPSE.

Greenwich Mean Time of δ in Right Ascension, June 17^d 20^h 46^m 15^s·8

Sun and Moon's Right Ascension	..	..	..	..	05	44	09	79	
Hourly Motions	..	..	..	..	10 ^s ·40	and	163 ^s ·61		
Sun's Declination	..	..	..	..	..	N. 23	23	58	0
Hourly Motion	..	..	..	..	..	N. 0	03	9	
Moon's Declination	..	..	..	..	..	N. 24	56	07	0
Hourly Motion	..	..	..	..	..	N. 4	18	1	
Sun's Equatorial Horizontal Parallax	..	..						8	7
Sun's True Semidiameter	..	..	..	..			15	44	4
Moon's Equatorial Horizontal Parallax	..	..					60	41	7
Moon's True Semidiameter	..	..	..	..			16	31	5

CIRCUMSTANCES OF THE ECLIPSE.

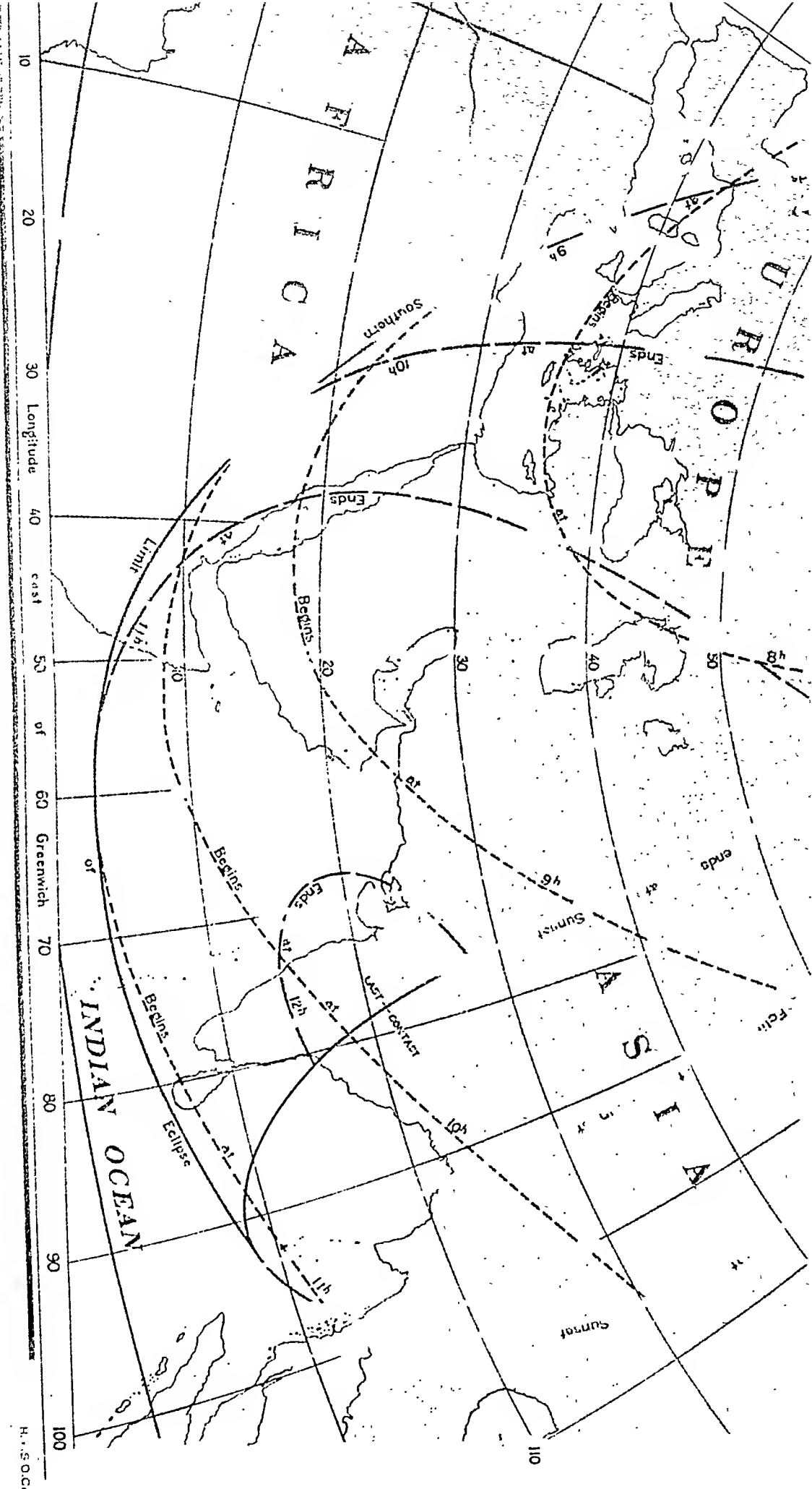
			Greenwich Mean Time.	Longitude from Greenwich.	Latitude.
			d h m	° ' "	° ' "
Eclipse begins	..	..	June 17 20 01·6	95 52 E.	61 51 N.
Greatest Eclipse	..	..	17 20 27·0	70 33 E.	65 39 N.
Eclipse ends	..	..	17 20 52·3	41 42 E.	66 31 N.

Magnitude of greatest Eclipse = 0·037 (Sun's Diameter = 1·0).

BESSELIAN ELEMENTS OF THE PARTIAL ECLIPSE OF THE SUN,
JUNE 17, 1928.

Greenwich Mean Time.	Co-ordinates of Centre of Shadow on Fundamental Plane.		Direction of Axis of Shadow.			Radius of Penumbra on Fundamental Plane.
	r	y'	Log sin d	Log cos d	μ	
h m						
20 00	-0·44229	+1·46740	+9·59887	+9·96274	119 48·7	+0·53274
10	0·34669	1·47918	9·59887	9·96274	122 18·6	0·53275
20	0·25108	1·49095	9·59887	9·96274	124 48·6	0·53276
30	0·15548	1·50270	9·59887	9·96274	127 18·6	0·53277
40	-0·05988	1·51444	9·59888	9·96274	129 48·6	0·53278
50	+0·03573	1·52616	9·59888	9·96274	132 18·6	0·53279
21 00	+0·13133	+1·53787	+9·59888	+9·96274	134 48·6	+0·53280
Greenwich Mean Time.	Log x' for 1 Minute.		Log y' for 1 Minute.	Log μ' for 1 Minute.	Log Tangent of Angle of Cone.	
					Penumbra.	
h m						
20 00	+7·9805		+7·0714	+1·1761	+7·66284	
21 00	+7·9805		+7·0683	+1·1761	+7·66284	

Note: The hours of beginning and ending are expressed in Greenwich Mean Time



IV.—*A Partial Eclipse of the Sun, November 12, 1928, visible at Greenwich.*

ELEMENTS OF THE ECLIPSE.

Greenwich Mean Time of δ in Right Ascension, November 12^d 08^h 57^m 33^s·3

Sun and Moon's Right Ascension	..	..	..	..	h	m	s
					15	09	09·66
Hourly Motions	..	..	..	..	..	10 ^s ·18	and 116 ^s ·22
Sun's Declination	..	..	..	..	..	S. 17°	40' 43"·4
Hourly Motion	..	..	..	..	..	S. 0	40·8
Moon's Declination	..	..	..	..	..	S. 16	37 47·5
Hourly Motion	..	..	..	..	..	S. 10	36·2
Sun's Equatorial Horizontal Parallax	..	..	..	..	..		8·9
Sun's True Semidiameter	..	..	..	..	..	16	09·8
Moon's Equatorial Horizontal Parallax	..	..	..	..	..	54	07·7
Moon's True Semidiameter	..	..	..	..	..	14	44·2

CIRCUMSTANCES OF THE ECLIPSE.

			Greenwich Mean Time.	Longitude from Greenwich.	Latitude.
			d h m	° ' "	° ' "
Eclipse begins	..	Nov.	12 07 33·3	6 04 E.	59 54 N.
Greatest Eclipse	..	"	12 09 47·9	80 50 E.	62 40 N.
Eclipse ends	..	"	12 12 02·8	78 09 E.	21 25 N.

Magnitude of greatest Eclipse=0·808 (Sun's Diameter=1·0).

BESSELIAN ELEMENTS OF THE PARTIAL ECLIPSE OF THE SUN
NOVEMBER 12, 1928.

Greenwich Mean Time.	Co-ordinates of Centre of Shadow on Fundamental Plane.		Direction of Axis of Shadow.			Radius of Penumbra or Fundamental Plane.
	x	y	Log sin d	Log cos d	μ	l_1
^h ^m						
07 30	-0.68663	+1.43394	-9.48211	+9.97902	296° 27.1	+0.57230
40	0.60822	1.40331	9.48215	9.97902	298 57.1	0.57231
50	0.52980	1.37267	9.48219	9.97901	301 27.1	0.57233
08 00	-0.45138	+1.34204	-9.48224	+9.97901	303 57.1	+0.57234
10	0.37296	1.31141	9.48228	9.97900	306 27.1	0.57235
20	0.29454	1.28079	9.48232	9.97900	308 57.1	0.57236
30	0.21611	1.25017	9.48236	9.97900	311 27.1	0.57238
40	0.13768	1.21955	9.48241	9.97899	313 57.1	0.57239
50	-0.05925	1.18893	9.48245	9.97899	316 27.1	0.57240
09 00	+0.01918	+1.15832	-9.48249	+9.97898	318 57.1	+0.57241
10	0.09761	1.12771	9.48254	9.97898	321 27.1	0.57242
20	0.17604	1.09710	9.48258	9.97897	323 57.1	0.57243
30	0.25448	1.06650	9.48262	9.97897	326 27.1	0.57244
40	0.33292	1.03590	9.48267	9.97896	328 57.1	0.57244
50	0.41136	1.00531	9.48271	9.97896	331 27.1	0.57245
10 00	+0.48980	+0.97472	-9.48275	+9.97896	333 57.1	+0.57246
10	0.56824	0.94413	9.48280	9.97895	336 27.1	0.57246
20	0.64668	0.91354	9.48284	9.97895	338 57.1	0.57247
30	0.72512	0.88296	9.48288	9.97894	341 27.1	0.57247
40	0.80356	0.85239	9.48292	9.97894	343 57.1	0.57248
50	0.88201	0.82182	9.48297	9.97893	346 27.1	0.57248
11 00	+0.96045	+0.79125	-9.48301	+9.97893	348 57.1	+0.57248
10	1.03889	0.76068	9.48305	9.97892	351 27.1	0.57249
20	1.11733	0.73012	9.48309	9.97892	353 57.1	0.57249
30	1.19578	0.69957	9.48314	9.97892	356 27.1	0.57249
40	1.27422	0.66902	9.48318	9.97891	358 57.1	0.57249
50	1.35266	0.63847	9.48323	9.97891	1 27.1	0.57249
12 00	+1.43110	+0.60793	-9.48327	+9.97890	3 57.1	+0.57249
10	+1.50954	+0.57739	-9.48331	+9.97890	6 27.1	+0.57249

Greenwich Mean Time.	Log x' for 1 Minute.	Log y' for 1 Minute.	Log μ' for 1 Minute.	Log Tangent of Angle of Cone.
				Penumbra.
^h ^m				
07 00	+7.8943	-7.4864	+1.1761	+7.67451
08 00	7.8944	7.4861	1.1761	7.67452
09 00	7.8945	7.4859	1.1761	7.67452
10 00	7.8945	7.4856	1.1761	7.67452
11 00	7.8946	7.4852	1.1761	7.67453
12 00	7.8945	7.4849	1.1761	7.67453
13 00	+7.8945	-7.4845	+1.1761	+7.67454

At ARMAGH, a Partial Eclipse is partly visible, Magnitude 0.19.

	d	h	m	
Begins Nov.				} Greenwich Mean Time.
Greatest Phase „ 12 08 25				
Ends „ 12 09 12				
Angle from North Point of First Contact				
Angle from Vertex of First Contact				
Angle from North Point of Last Contact				67°.
Angle from Vertex of Last Contact				92°.

At DUBLIN, a Partial Eclipse is partly visible, Magnitude 0.17.

	d	h	m	
Begins Nov.				} Greenwich Mean Time.
Greatest Phase „ 12 08 24				
Ends „ 12 09 10				
Angle from North Point of First Contact				
Angle from Vertex of First Contact				
Angle from North Point of Last Contact				65°.
Angle from Vertex of Last Contact				91°.

At GLASGOW, a Partial Eclipse is partly visible, Magnitude 0.24.

	d	h	m	
Begins Nov.				} Greenwich Mean Time.
Greatest Phase „ 12 08 27				
Ends „ 12 09 20				
Angle from North Point of First Contact				
Angle from Vertex of First Contact				
Angle from North Point of Last Contact				72°.
Angle from Vertex of Last Contact				93°.

At EDINBURGH, a Partial Eclipse is partly visible, Magnitude 0.25.

	d	h	m	
Begins Nov.				} Greenwich Mean Time.
Greatest Phase „ 12 08 28				
Ends „ 12 09 22				
Angle from North Point of First Contact				
Angle from Vertex of First Contact				
Angle from North Point of Last Contact				73°.
Angle from Vertex of Last Contact				94°.

ECLIPSES, 1928.

At LIVERPOOL, a Partial Eclipse is partly visible. Magnitude 0.20.

				d	h	m	
Begins	..	..	..	Nov.	..	..	..
Greatest Phase	..	..	..	„	12	08	26
Ends	..	..	..	„	12	09	16
} Greenwich Mean Time.							
Angle from North Point of First Contact	..	..	..	..	..	..	..
Angle from Vertex of First Contact	..	..	..	..	..	..	..
Angle from North Point of Last Contact	..	..	..	..	..	..	69°.
Angle from Vertex of Last Contact	..	..	..	..	..	..	92°.

At DURHAM, a Partial Eclipse is partly visible, Magnitude 0.24.

				d	h	m	
Begins	..	..	..	Nov.	..	..	..
Greatest Phase	..	..	..	„	12	08	28
Ends	..	..	..	„	12	09	23
} Greenwich Mean Time.							
Angle from North Point of First Contact	..	..	..	..	..	..	..
Angle from Vertex of First Contact	..	..	..	..	..	..	..
Angle from North Point of Last Contact	..	..	..	..	..	..	72°.
Angle from Vertex of Last Contact	..	..	..	..	..	..	93°.

At OXFORD, a Partial Eclipse is visible, Magnitude 0.18.

				d	h	m	
Begins	..	..	..	Nov.	12	07	40
Greatest Phase	..	..	..	„	12	08	27
Ends	..	..	..	„	12	09	16
} Greenwich Mean Time.							
Angle from North Point of First Contact	..	..	..	..	..	..	354°.
Angle from Vertex of First Contact	..	..	..	..	..	..	28°.
Angle from North Point of Last Contact	..	..	..	..	..	..	68°.
Angle from Vertex of Last Contact	..	..	..	..	..	..	91°.

At GREENWICH, a Partial Eclipse is visible, Magnitude 0.19.

				d	h	m	
Begins	..	..	..	Nov.	12	07	40
Greatest Phase	..	..	..	„	12	08	28
Ends	..	..	..	„	12	09	18
} Greenwich Mean Time.							
Angle from North Point of First Contact	..	..	..	..	..	..	354°.
Angle from Vertex of First Contact	..	..	..	..	..	..	27°.
Angle from North Point of Last Contact	68°.
Angle from Vertex of Last Contact	91°.

ECLIPSES, 1928.

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At CAMBRIDGE, a Partial Eclipse is visible, Magnitude 0.21.

				d	h	m	
Begins	Nov.	12	07 39	} Greenwich Mean Time.
Greatest Phase	..	..	..	„	12	08 28	
Ends	..	..	..	„	12	09 20	

Angle from North Point of First Contact	..	..	..	352°.
Angle from Vertex of First Contact	..	..	..	25°.
Angle from North Point of Last Contact	..	..	..	70°.
Angle from Vertex of Last Contact	..	..	..	92°.

At BOMBAY, a Partial Eclipse is visible, Magnitude 0.34.

				d	h	m	
Begins	..	..	..	Nov.	12	09 46	} Greenwich Mean Time.
Greatest Phase	..	..	..	„	12	10 58	
Ends	..	..	..	„	12	12 02	

Angle from North Point of First Contact	..	..	..	332°.
Angle from Vertex of First Contact	..	..	..	280°.
Angle from North Point of Last Contact	..	..	..	66°.
Angle from Vertex of Last Contact	..	..	..	358° ^f .

At MADRAS, a Partial Eclipse is visible, Magnitude 0.17.

				d	h	m	
Begins	..	..	..	Nov.	12	10 23	} Greenwich Mean Time.
Greatest Phase	..	..	..	„	12	11 12	
Ends	..	..	..	„	12	11 57	

Angle from North Point of First Contact	..	..	..	342°.
Angle from Vertex of First Contact	..	..	..	275°.
Angle from North Point of Last Contact	..	..	..	50°.
Angle from Vertex of Last Contact	..	..	..	334°.

V.—*A Total Eclipse of the Moon*, November 27, 1928, partly visible as a partial eclipse at Greenwich; the beginning visible generally in the western and northern borders of Europe, the Atlantic Ocean, North America, South America, the Pacific Ocean, and the northern part of Asia; the ending visible generally in North America, the northern part of South America, the Pacific Ocean, Australia, and the eastern part of Asia.

ELEMENTS OF THE ECLIPSE.

Greenwich Mean Time of \varnothing in Right Ascension, November 27^d 09^h 13^m 00^s.5

Sun's Right Ascension..	..	..	..	..	16	11	47.53
Hourly Motion ..	..	..	..	..	..	..	10.67
Moon's Right Ascension	..	..	..	..	04	11	47.53
Hourly Motion ..	..	..	..	..	..	..	158.50
Sun's Declination	..	..	..	..	S. 21	07	19.5
Hourly Motion ..	..	..	..	..	..	S. 0	27.5
Moon's Declination	..	..	..	..	N. 21	32	35.7
Hourly Motion ..	..	..	..	..	..	N. 10	22.0
Sun's Equatorial Horizontal Parallax	..	..	..	..	..	..	8.9
Sun's True Semidiameter	..	..	..	..	..	16	12.8
Moon's Equatorial Horizontal Parallax	..	..	..	..	..	61	28.4
Moon's True Semidiameter	..	..	..	..	..	16	44.2

CIRCUMSTANCES OF THE ECLIPSE.

			^d	^h	^m	
Moon enters Penumbra ..	Nov.	27	06	25	4	} Greenwich Mean Time.
Moon enters Umbra ..	..	27	07	23	8
Total Eclipse begins ..	..	27	08	33	1
Middle of the Eclipse ..	..	27	09	01	2
Total Eclipse ends ..	..	27	09	29	3
Moon leaves Umbra ..	..	27	10	39	0
Moon leaves Penumbra ..	..	27	11	37	8

Center of Disk	Angle of Position from the North Pole	The Moon being in the Zenith in Longitude from Greenwich,	and in Latitude
First	96 to E.	115° 09' W.	21° 13' N.
Last	129 to W.	161 57 W.	21 47 N.

Magnitude of the Eclipse = 1.155 (Moon's Diameter = 1.0).

MEAN PLACES OF OCCULTATION STARS, 1928. 459

Name of Star.	Magni- tude.	Right Ascension.	Annual Proper Motion.	Declination.	Annual Proper Motion.
		<i>h. m. s.</i>	<i>"</i>	<i>° ' "</i>	<i>"</i>
33 Piscium	4.8	00 01 39.040	-0.0006	- 6 06 37.28	+0.091
24 B. Ceti	6.0	00 06 37.687	+0.0020	5 38 53.64	0.000
54 B. Ceti	6.3	00 20 48.885	-0.0024	2 37 02.45	-0.051
14 Ceti	5.4	00 31 51.012	+0.0098	- 0 54 03.45	-0.059
26 Ceti	6.0	01 00 06.627	+0.0081	+ 0 58 52.80	-0.037
33 Ceti	6.1	01 06 51.129	-0.0010	+ 2 03 46.62	-0.006
f Piscium	5.3	01 14 05.012	-0.0033	3 14 08.53	-0.025
117 G. Piscium	6.5	01 23 10.144	..	3 09 45.18	..
u Piscium	5.0	01 26 24.641	+0.0199	5 46 24.83	-0.027
v Piscium	4.6	01 37 40.941	-0.0015	5 07 25.87	+0.003
39 B. Arietis	6.5	02 01 03.035	+0.0025	+ 7 23 26.44	-0.032
64 Ceti	5.8	02 07 32.865	-0.0092	8 14 00.86	-0.107
51 Ceti	4.6	02 09 10.866	-0.0012	8 30 34.44	-0.016
5 Arietis	5.5	02 20 57.257	+0.0006	10 17 06.81	-0.022
25 Arietis	6.5	02 23 33.456	-0.0195	9 52 46.61	-0.200
31 Arietis	5.7	02 32 42.124	+0.0189	+12 08 10.59	-0.085
o Arietis	5.8	02 40 34.693	-0.0002	15 00 27.56	-0.026
38 Arietis	5.2	02 41 01.979	+0.0081	12 08 37.59	-0.079
σ Arietis	5.4	02 47 30.828	+0.0016	14 47 10.29	-0.034
145 B. Arietis	6.5	03 00 39.979	-0.0021	15 34 36.97	-0.141
175 B. Arietis	6.4	03 22 56.379	+0.0026	+18 30 19.22	-0.011
26 B. Tauri	6.4	03 30 02.041	+0.0059	17 35 51.48	-0.323
33 B. Tauri	6.3	03 35 21.216	+0.0028	16 18 13.58	-0.026
13 Tauri	5.6	03 38 09.592	+0.0003	19 28 14.74	-0.019
14 Tauri	6.2	03 39 37.216	+0.0084	19 26 19.16	-0.049
148 B. Tauri	5.9	03 49 02.760	+0.0085	+17 06 49.87	-0.036
163 B. Tauri	5.8	03 56 39.698	+0.0095	17 59 31.05	-0.040
4 Tauri	4.5	04 00 26.127	+0.0070	21 53 11.47	-0.058
39 Tauri	6.1	04 01 04.306	+0.0125	21 48 57.25	-0.131
43 Tauri	5.5	04 04 58.121	+0.0079	19 25 11.87	-0.044
192 B. Tauri	6.1	04 08 34.796	-0.0016	+22 13 46.54	-0.019
o Tauri	4.8	04 13 02.368	-0.0023	20 24 10.09	-0.055
51 Tauri	5.6	04 14 07.363	+0.0071	21 24 16.51	-0.041
53 Tauri	5.3	04 15 11.340	+0.0028	20 58 09.92	-0.051
56 Tauri	5.2	04 15 20.810	+0.0032	21 36 03.28	-0.040
224 B. Tauri	6.1	04 18 08.439	-0.0002	+20 39 09.20	-0.001
227 B. Tauri	5.9	04 19 17.661	+0.0019	20 48 56.03	-0.031
κ Tauri	4.1	04 21 04.451	+0.0062	22 07 49.96	-0.042
67 Tauri	5.4	04 21 07.587	+0.0093	22 02 12.11	-0.048
υ Tauri	4.2	04 21 59.774	+0.0079	22 39 05.93	-0.048
72 Tauri	5.4	04 22 58.938	+0.0004	+22 50 07.52	-0.008
247 B. Tauri	5.8	04 23 44.202	+0.0073	21 27 36.82	-0.076
282 B. Tauri	6.4	04 31 29.117	-0.0028	19 44 05.17	+0.018
284 B. Tauri	6.0	04 32 08.938	+0.0108	23 11 40.97	-0.102
129 H ¹ . Tauri	5.8	04 34 00.947	+0.0013	20 32 28.97	-0.010
τ Tauri	4.3	04 37 55.287	+0.0007	+22 49 12.71	-0.020
95 Tauri	6.2	04 38 52.063	+0.0014	23 57 13.53	-0.030
300 B. Tauri	6.2	04 41 21.505	+0.0005	23 29 50.96	+0.004
315 B. Tauri	6.3	04 51 52.396	-0.0001	+24 28 42.42	-0.033

460 MEAN PLACES OF OCCULTATION STARS, 1928.

Name of Star.				Magni- tude.	Right Ascension.	Annual Proper Motion.	Declination.	Annual Proper Motion.
					h m s	s	° ' "	"
99	Tauri	..	..	6.0	04 53 26.401	+0.0003	+23 50 14.41	-0.035
k	Tauri	..	..	5.6	04 53 44.904	+0.0023	24 56 25.80	-0.061
t	Tauri	..	..	4.7	04 58 47.446	+0.0056	21 29 18.39	-0.049
105	Tauri	...	..	6.0	05 03 37.016	+0.0004	21 36 39.34	-0.007
103	Tauri	..	..	5.5	05 03 43.276	+0.0003	24 10 16.62	-0.022
108	Tauri	..	..	6.2	05 11 07.907	-0.0005	+22 12 13.70	-0.025
n	Tauri	..	..	5.1	05 14 57.006	+0.0021	22 01 24.64	-0.083
118	Tauri	..	..	5.4	05 24 50.591	+0.0015	25 05 36.96	-0.038
121	Tauri	..	..	5.1	05 31 03.200	+0.0010	23 59 35.17	-0.031
125	Tauri	..	..	5.1	05 35 16.453	+0.0018	25 51 29.53	-0.029
394 B.	Tauri	..	..	6.0	05 38 57.165	+0.0011	+23 10 16.99	-0.042
132	Tauri	..	..	5.0	05 44 35.803	0.0000	24 32 41.68	-0.023
412 B.	Tauri	..	..	5.8	05 52 31.569	..	24 14 26.42	..
139	Tauri	..	..	4.7	05 53 31.591	0.0000	25 56 47.41	-0.007
1	Geminorum	..	..	4.1	05 59 44.629	+0.0002	23 16 07.21	-0.109
5	Geminorum	..	..	5.9	06 07 07.431	+0.0011	+24 26 15.24	-0.061
8	Geminorum	..	..	6.1	06 11 55.112	-0.0009	23 59 40.59	-0.026
9	Geminorum	..	..	6.2	06 12 35.189	+0.0004	23 46 00.26	-0.008
52 B.	Geminorum	..	..	6.5	06 33 02.428	-0.0021	24 39 07.12	-0.002
e	Geminorum	..	..	5.2	06 39 30.208	-0.0001	25 12 14.27	-0.018
37	Geminorum	..	..	5.7	06 50 53.089	-0.0028	+25 28 01.98	+0.014
39	Geminorum	..	..	6.2	06 54 21.287	-0.0117	26 10 37.54	+0.086
40	Geminorum	..	..	6.3	06 55 01.266	-0.0012	26 00 48.03	-0.015
ω	Geminorum	..	..	5.2	06 58 01.668	-0.0003	24 19 10.55	0.000
47	Geminorum	..	..	5.6	07 06 55.287	-0.0011	26 58 34.34	-0.051
48	Geminorum	..	..	5.8	07 08 04.028	-0.0009	+24 15 02.20	-0.041
52	Geminorum	..	..	6.1	07 10 17.880	+0.0038	25 00 41.87	-0.086
134 B.	Geminorum	..	..	6.5	07 12 35.974	+0.0058	26 49 14.25	-0.134
Δ	Geminorum	..	..	5.1	07 19 05.252	-0.0051	25 11 25.58	-0.014
υ	Geminorum	..	..	4.3	07 31 29.352	-0.0016	27 03 25.81	-0.109
176 B.	Geminorum	..	..	6.3	07 33 53.239	+0.0038	+24 31 21.16	-0.029
181 B.	Geminorum	..	..	6.0	07 34 51.136	-0.0006	24 23 12.18	-0.029
c	Geminorum	..	..	5.5	07 39 43.540	-0.0017	25 57 23.89	-0.028
κ	Geminorum	..	..	3.6	07 40 06.258	-0.0014	24 34 19.05	-0.060
82	Geminorum	..	..	6.3	07 44 15.470	-0.0010	23 19 13.81	-0.001
ω	Canceri	..	..	6.1	07 56 34.637	+0.0003	+25 35 28.30	-0.004
5 B.	Canceri	..	..	6.4	07 56 43.066	-0.0003	23 46 55.59	-0.047
4	Canceri	..	..	6.2	07 57 23.426	-0.0012	25 17 20.20	+0.007
9	Canceri	..	..	6.2	08 02 02.505	-0.0009	22 50 31.99	-0.018
η	Canceri	..	..	5.9	08 06 07.173	-0.0055	25 43 37.80	-0.351
35 B	Canceri	..	..	6.4	08 09 25.965	-0.0017	+23 21 19.90	-0.022
λ	Canceri	..	..	5.9	08 16 15.503	-0.0011	24 15 00.81	-0.028
28	Canceri	..	..	6.1	08 24 20.852	-0.0024	24 23 05.50	-0.071
υ ¹	Canceri	..	..	5.7	08 27 15.315	-0.0056	24 19 29.59	-0.069
υ ²	Canceri	..	..	6.4	08 28 44.962	-0.0047	24 19 50.52	-0.068
γ	Canceri	..	..	4.7	08 39 07.388	-0.0071	+21 43 42.85	-0.043
194 B.	Canceri (Second Star)	..	..	6.3	09 03 18.175	-0.0121	23 16 16.19	+0.017
ξ	Canceri	..	..	5.2	09 05 13.444	+0.0011	22 20 15.83	+0.002
79	Canceri	..	..	6.1	09 06 12.904	+0.0003	+22 17 22.82	-0.005

MEAN PLACES OF OCCULTATION STARS, 1928. 461

Name of Star.			Magni- tude.	Right Ascension.	Annual Proper Motion.	Declination.	Annual Proper Motion.	
				h m s	s	° ' "	"	
90	H ¹ .	Canceri	.. ..	6.1	09 09 30.767	-0.0007	+21 34 50.82	-0.013
57	B.	Leonis	.. ..	6.5	09 40 30.062	+0.0020	19 11 42.69	-0.077
107	B.	Leonis	.. ..	6.3	10 01 46.838	-0.0023	16 06 32.26	+0.017
7		Leonis	.. ..	3.6	10 03 24.486	-0.0022	17 06 52.07	-0.004
42		Leonis	.. ..	6.1	10 17 58.189	-0.0017	15 20 20.61	-0.027
46		Leonis	.. ..	5.8	10 28 21.342	-0.0024	+14 30 26.53	+0.022
k		Leonis	.. ..	5.5	10 42 36.623	-0.0089	14 34 31.18	-0.064
l		Leonis	.. ..	4.1	11 20 10.300	+0.0103	10 55 33.63	-0.083
ω		Virginis	.. ..	5.4	11 34 44.913	-0.0005	8 31 57.87	-0.012
ξ ¹		Virginis	.. ..	4.8	11 41 34.449	+0.0045	8 39 30.18	-0.034
ν		Virginis	.. ..	4.2	11 42 09.561	-0.0014	+6 55 58.67	-0.186
π		Virginis	.. ..	4.6	11 57 10.995	-0.0009	7 00 56.90	-0.032
36	B.	Virginis	.. ..	6.5	12 00 04.019	-0.0095	5 57 37.66	-0.076
c		Virginis	.. ..	5.1	12 16 41.553	-0.0198	3 42 48.21	-0.072
250	B.	Virginis	.. ..	5.9	12 34 42.093	-0.0042	+2 15 02.89	-0.021
46		Virginis	.. ..	6.1	12 56 53.350	-0.0026	-2 58 53.92	+0.046
48		Virginis	.. ..	6.5	13 00 11.708	-0.0033	3 16 33.51	-0.028
65		Virginis	.. ..	6.0	13 19 34.906	-0.0016	4 32 53.54	-0.016
66		Virginis	.. ..	5.7	13 20 48.222	+0.0105	4 47 17.31	-0.030
72		Virginis	.. ..	6.1	13 26 40.179	+0.0023	6 05 56.68	+0.014
l		Virginis	.. ..	4.8	13 28 13.162	-0.0069	-5 53 04.26	-0.045
80		Virginis	.. ..	5.6	13 31 46.413	+0.0010	5 01 47.82	+0.075
566	B.	Virginis	.. ..	6.4	13 40 09.261	-0.0049	5 08 12.53	±0.025
88		Virginis	.. ..	6.5	13 44 31.809	-0.0032	6 28 43.84	-0.033
598	B.	Virginis	.. ..	6.1	13 51 11.431	-0.0121	7 42 19.02	-0.049
623	B.	Virginis	.. ..	6.5	14 00 32.580	-0.0026	-8 54 43.87	+0.006
95		Virginis	.. ..	5.4	14 02 54.161	-0.0098	8 58 13.71	+0.011
96		Virginis	.. ..	6.5	14 05 10.254	-0.0005	9 59 39.08	+0.016
κ		Virginis	.. ..	4.4	14 09 03.130	+0.0006	9 56 21.73	+0.132
2		Librae	.. ..	6.3	14 19 32.949	-0.0014	11 23 09.65	-0.067
4	G.	Librae	.. ..	6.5	14 20 48.511	-0.0046	-11 20 36.52	-0.028
6	B.	Librae	.. ..	6.2	14 33 09.804	-0.0591	11 59 59.22	+0.383
22	B.	Librae	.. ..	6.4	14 43 58.966	+0.0013	12 32 15.36	-0.083
μ		Librae	.. ..	5.4	14 45 22.013	-0.0053	13 51 00.04	-0.028
8		Librae	.. ..	5.4	14 46 42.020	-0.0073	15 41 55.75	-0.074
ν		Librae	.. ..	5.3	15 02 36.364	-0.0035	-15 58 43.65	-0.037
22		Librae	.. ..	6.5	15 02 47.665	-0.0050	16 12 23.96	-0.030
26		Librae	.. ..	6.3	15 10 29.714	-0.0022	17 30 02.04	-0.016
28		Librae	.. ..	6.2	15 16 48.467	-0.0015	17 53 53.10	-0.061
0		Librae	.. ..	6.2	15 16 59.680	+0.0019	15 17 22.87	+0.024
32		Librae	.. ..	5.9	15 24 11.532	+0.0006	-16 28 00.03	-0.043
34		Librae	.. ..	6.0	15 26 36.458	+0.0012	16 21 48.53	-0.007
11	H.	Librae	.. ..	5.4	15 28 28.360	-0.0012	19 25 34.39	-0.036
ζ		Librae	.. ..	5.6	15 28 50.934	-0.0012	16 36 36.29	-0.033
41		Librae	.. ..	5.3	15 34 45.705	+0.0069	19 03 56.10	-0.058
κ		Librae	... ..	5.0	15 37 47.629	-0.0035	-19 26 47.08	-0.106
λ		Librae	.. ..	4.9	15 49 09.014	-0.0017	19 57 11.94	-0.046
47		Librae	.. ..	5.8	15 50 50.522	-0.0010	-19 10 17.37	-0.020

462 MEAN PLACES OF OCCULTATION STARS, 1928.

Name of Star.	Magni- tude.	Right Ascension.	Annual Proper Motion.	Declination.	Annual Proper Motion.
		h m s	s	° ' "	"
10 G. Scorpii	5.9	15 53 27.898	+0.0012	-20 46 31.54	-0.020
β^1 Scorpii	2.9	16 01 14.770	-0.0011	19 36 34.78	-0.028
β^2 Scorpii	5.0	16 01 15.239	-0.0010	19 36 20.79	-0.005
ω^1 Scorpii	4.3	16 02 35.469	-0.0015	20 28 32.28	-0.039
ω^2 Scorpii	4.6	16 03 10.781	+0.0030	20 40 32.59	-0.061
ν Scorpii	3.9	16 07 48.382	-0.0017	-19 16 30.30	-0.041
84 B. Scorpii	6.3	16 10 14.685	-0.0013	20 55 33.34	-0.043
51 G. Scorpii	6.5	16 12 44.017	-0.0011	21 07 33.81	-0.029
58 G. Scorpii	6.2	16 14 54.528	+0.0002	20 02 36.42	-0.008
ν Ophiuchi	4.6	16 19 53.247	-0.0014	19 52 13.00	-0.060
ρ Ophiuchi	4.7	16 21 15.785	-0.0015	-23 16 55.24	-0.008
ω Ophiuchi	4.5	16 27 51.932	+0.0014	21 18 49.32	+0.026
123 B. Scorpii	6.5	16 36 19.686	+0.0008	20 16 09.63	+0.037
24 Ophiuchi	5.5	16 52 27.372	+0.0002	23 02 15.66	-0.034
88 B. Ophiuchi	6.3	16 55 33.073	+0.0005	24 59 03.13	-0.015
26 Ophiuchi	5.8	16 55 44.703	+0.0036	-24 52 49.86	-0.053
116 B. Ophiuchi	6.3	17 01 53.684	-0.0022	21 27 58.45	-0.083
137 B. Ophiuchi	6.3	17 07 48.526	+0.0058	25 10 03.32	-0.045
39 Ophiuchi	5.1	17 13 37.072	-0.0046	24 12 35.77	-0.011
θ Ophiuchi	3.3	17 17 35.126	-0.0006	24 55 45.42	-0.036
101 B. Ophiuchi	6.3	17 20 42.045	+0.0010	-24 10 44.95	+0.017
44 Ophiuchi	4.1	17 21 58.223	-0.0009	24 06 38.92	-0.137
136 G. Ophiuchi	6.3	17 22 27.881	-0.0010	25 52 51.41	-0.003
51 Ophiuchi	4.8	17 27 01.269	0.0000	23 54 30.37	-0.030
151 G. Ophiuchi	6.0	17 27 16.125	+0.0012	26 12 57.23	-0.026
63 Ophiuchi	6.1	17 50 28.203	-0.0001	-24 52.27.62	-0.015
4 Sagittarii	4.8	17 55 23.763	+0.0001	23 48 39.91	-0.058
7 Sagittarii	5.5	17 58 26.312	-0.0003	24 16 59.12	-0.007
9 Sagittarii	6.0	17 59 27.486	-0.0006	24 21 49.22	-0.006
1 Sagittarii	5.2	18 07 19.755	+0.0018	23 43 02.94	-0.042
66 B. Sagittarii	4.7	18 13 32.763	0.0000	-27 04 11.47	+0.015
67 B. Sagittarii	6.4	18 14 14.158	-0.0044	25 38 00.28	-0.062
70 B. Sagittarii	6.4	18 17 05.478	+0.0014	24 56 56.85	-0.001
68 G. Sagittarii	6.2	18 23 14.454	0.0000	26 40 44.27	-0.046
λ Sagittarii	2.9	18 23 31.640	-0.0033	25 27 47.55	-0.199
69 G. Sagittarii	6.3	18 23 36.765	+0.0018	-26 48 06.17	-0.032
86 B. Sagittarii	6.5	18 24 27.806	-0.0063	26 37 45.84	-0.055
24 Sagittarii	5.7	18 29 29.596	-0.0002	24 05 15.38	-0.020
126 B. Sagittarii	5.7	18 40 24.017	-0.0008	25 05 05.74	-0.041
ϕ Sagittarii	3.3	18 41 09.497	+0.0034	27 03 58.81	-0.006
σ Sagittarii	2.1	18 50 48.030	-0.0003	-26 23 16.32	-0.075
162 B. Sagittarii	6.4	18 53 55.655	-0.0009	24 58 27.77	-0.020
127 G. Sagittarii	6.4	18 55 59.731	+0.0023	25 02 36.93	+0.051
172 B. Sagittarii	5.8	18 58 03.478	+0.0002	24 56 50.78	-0.172
189 B. Sagittarii	6.1	19 03 50.713	+0.0012	24 46 16.04	+0.001
201 B. Sagittarii	5.9	19 08 47.644	-0.0015	-26 01 44.63	-0.018
ψ Sagittarii	4.8	19 11 07.603	+0.0025	25 22 56.31	-0.035
208 B. Sagittarii	6.1	19 11 10.079	+0.0072	-24 18 11.52	-0.078

MEAN PLACES OF OCCULTATION STARS, 1928. 463

Name of Star.			Magni- tude.	Right Ascension.	Annual Proper Motion.	Declination.	Annual Proper Motion.
				h m s		° ' "	"
χ	Sagittarii	..	4.9	19 20 53.711	+0.0034	-24 38 59.38	-0.063
49	Sagittarii	..	5.5	19 21 08.292	-0.0017	24 06 16.77	+0.001
248 B.	Sagittarii	..	5.7	19 25 25.092	+0.0017	27 08 02.03	-0.014
51	Sagittarii	..	5.8	19 31 39.488	+0.0004	24 52 40.31	-0.005
h	Sagittarii	..	4.7	19 32 19.634	+0.0045	25 02 38.34	-0.027
53	Sagittarii	..	6.3	19 35 29.974	-0.0004	-23 35 34.28	-0.037
274 B.	Sagittarii	..	6.1	19 35 47.578	+0.0018	23 35 43.32	-0.031
308 B.	Sagittarii	..	6.3	19 49 59.214	-0.0094	24 07 18.15	-0.438
ω	Sagittarii	..	4.8	19 51 25.877	+0.0145	26 29 30.43	+0.080
Δ	Sagittarii	..	4.9	19 54 34.094	+0.0013	26 23 30.12	+0.036
329 B.	Sagittarii	..	6.1	19 57 07.312	+0.0010	-22 56 11.14	-0.005
336 B.	Sagittarii	..	6.5	19 59 28.487	-0.0019	22 47 54.35	+0.052
36 B.	Capricorni	..	6.2	20 25 18.020	+0.0003	22 37 53.16	-0.027
56 B.	Capricorni	..	6.3	20 35 54.924	+0.0375	24 02 17.32	+0.462
17	Capricorni	..	5.8	20 41 59.707	+0.0011	21 46 36.42	-0.014
86 B.	Capricorni	..	6.2	20 48 48.047	+0.0071	-24 03 13.78	-0.048
χ	Capricorni	..	5.3	21 04 26.367	+0.0013	21 29 02.07	-0.059
27	Capricorni	..	6.1	21 05 26.200	+0.0085	20 50 47.29	-0.123
φ	Capricorni	..	5.3	21 11 32.146	0.0000	20 57 05.39	0.000
33	Capricorni	..	5.3	21 20 04.748	-0.0013	21 09 31.14	-0.112
35	Capricorni	..	6.0	21 23 10.106	-0.0016	21 30 33.06	-0.030
128 B.	Capricorni	..	6.5	21 25 57.281	+0.0019	19 27 45.46	0.027
37	Capricorni	..	5.7	21 30 48.703	-0.0016	20 24 22.42	0.025
ε	Capricorni	..	4.7	21 33 03.087	0.0000	19 47 22.35	0.000
κ	Capricorni	..	4.8	21 38 38.404	+0.0094	19 11 43.03	-0.006
143 B.	Capricorni	..	6.1	21 39 12.125	+0.0067	-19 57 02.63	-0.039
152 B.	Capricorni	..	6.5	21 46 15.435	-0.0004	17 10 55.23	-0.054
154 B.	Capricorni	..	6.1	21 47 42.065	+0.0103	18 57 33.24	-0.076
161 B.	Capricorni	..	6.4	21 58 14.121	+0.0060	18 15 00.65	-0.090
29	Aquarii (mean)	..	6.5	21 58 30.236	+0.0008	17 18 43.58	+0.009
56	Aquarii	..	6.1	22 26 25.982	+0.0022	-14 57 15.38	-0.034
69	Aquarii	..	5.6	22 43 53.534	+0.0024	14 26 11.35	-0.014
7	Aquarii	..	4.4	22 45 46.919	-0.0008	13 58 22.84	-0.033
74	Aquarii	..	5.8	22 49 41.359	+0.0013	11 59 59.44	0.000
257 B.	Aquarii	..	6.3	22 55 48.225	-0.0026	13 27 23.79	+0.034
290 B.	Aquarii	..	6.3	23 10 55.150	..	-11 04 47.50	..
γ ¹	Aquarii	..	4.5	23 12 07.255	+0.0249	9 28 48.40	-0.005
γ ²	Aquarii	..	4.6	23 14 09.766	+0.0012	9 34 32.51	-0.002
γ ³	Aquarii	..	5.2	23 15 13.041	+0.0027	10 00 16.90	-0.001
336 B.	Aquarii	..	6.3	23 25 17.440	..	9 39 43.69	..
351 B.	Aquarii	..	6.5	23 31 49.253	-0.0005	-7 51 47.25	+0.018
376 B.	Aquarii	..	6.3	23 44 50.567	+0.0009	6 46 49.36	-0.023
30	Pisium	..	4.7	23 58 16.061	+0.0030	-6 24 51.12	-0.037

JANUARY.

Name.	THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.	
	Mag.	Reductions from 1928-0.		Apparent Declina- tion	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S
		A ₁	A ₂								
f. Phœbe	5.3	-0.77	-5.0	3 14.5	1 03 16.8	+ 8 43.8	-0.3330	0.5417	+0.2507	+24	-62
117 G. Phœbe	6.5	-0.72	-5.8	3 00.7	07 33.7	-11 10.7	+0.7092	0.5429	0.2498	+90	+1
r. Phœbe	4.0	-0.65	-5.0	5 07.3	14 16.0	-4 42.9	+0.4859	0.5451	0.2473	+72	-14
39 B. Arcturi	6.5	-0.54	-3.8	7 23.4	2 07 58.5	+ 5 30.3	+0.5112	0.5496	0.2412	+90	+3
61 Ceti	5.8	-0.51	-3.4	8 14.5	03 55.1	+ 8 20.5	+0.6679	0.5510	0.2391	+88	-3
51 Ceti	4.6	-0.50	-3.3	8 33.5	04 39.3	+ 0 12.5	+0.5658	0.5513	+0.2385	+78	-9
2 Arcti	5.5	-0.45	-2.0	10 17.1	09 56.5	- 0 41.2	+0.0265	0.5540	0.2340	+43	-37
25 Arcti	6.5	-0.44	-2.7	9 52.7	11 06.2	- 8 34.0	+0.7060	0.5546	0.2320	+90	-1
34 Arcti	5.7	-0.42	-1.5	12 08.1	15 00.9	-4 35.7	-0.6267	0.5569	0.2288	+8	-74
38 Arcti	5.2	-0.36	-1.7	12 08.1	18 55.3	-1 06.0	+0.1990	0.5590	0.2248	+53	-27
26 B. Tauri	6.4	-0.15	-0.4	17 15.0	3 15 51.2	-4 48.7	-0.8406	0.5722	+0.1640	-5	-73
33 B. Tauri	6.3	-0.13	-0.1	16 15.2	18 00.0	-2 40.0	+0.8879	0.5736	0.1611	+90	+16
138 B. Tauri	5.0	-0.05	-0.4	17 06.5	23 48.1	+2 48.5	+1.1323	0.5773	0.1507	+90	-35
163 B. Tauri	5.8	-0.1	-0.7	17 50.5	4 02 56.0	+ 5 49.3	+0.8078	0.5793	0.1746	+90	-12
43 Tauri	5.5	-0.01	-1.1	19 25.2	06 19.7	+ 0 05.2	-0.0143	0.5814	0.1677	+39	-33
61 Tauri	4.8	-0.02	-1.3	20 24.2	09 36.2	-11 45.7	-0.4026	0.5833	+0.1609	+15	57
53 Tauri	6.3	-0.02	-1.5	20 55.2	10 25.3	-10 55.7	-0.0225	0.5830	0.1500	-12	70
221 B. L. II	6.1	-0.1	-1.3	20 30.2	11 30.7	- 0 47.5	-0.4167	0.5846	0.1504	+10	-52
227 B. L. III	6.0	-0.1	-1.3	20 49.0	12 07.6	- 0 25.2	-0.0587	0.5840	0.1554	+14	58
227 B. L. III	5.8	-0.1	-1.0	21 27.0	13 54.7	- 7 37.2	-0.5815	0.5850	0.1514	- 0	64
252 B. L. I	6.1	-0.1	-1.2	19 43.1	17 00.0	+ 4 38.6	+1.3006	0.5877	+0.1443	+69	+64
120 H. L. I	6.5	-0.1	-1.4	26 12.5	15 01.1	+ 3 49.4	+0.6143	0.5882	0.1427	+50	+ 6
105 L. I	6.7	-0.1	-1.0	21 26.5	5 03 45.5	+ 5 43.2	+0.0065	0.5931	0.1181	+90	+20
105 L. I	6.2	-0.1	-1.0	21 36.5	05 41.2	+ 7 31.0	+1.0624	0.5930	0.1133	+ 0	+35
105 L. I	6.2	-0.1	-1.7	22 12.3	05 37.0	+10 20.5	+0.7873	0.5951	0.1057	+60	-18
111 Tauri	6.1	-0.1	-1.7	22 01.3	10 06.2	+11 46.3	+1.1231	0.5957	+0.1115	+60	+22
124 Tauri	5.1	-0.25	-1.0	23 50.5	16 27.3	- 0 14.7	-0.2778	0.5977	0.0985	+26	-37
104 P. Tauri	6.0	-0.25	-1.7	23 10.3	10 23.7	+ 3 10.4	+0.7071	0.5985	0.0970	+ 0	-22
142 L. I	6.0	-0.26	-1.7	24 32.7	21 33.3	+1 14.4	+0.4286	0.5997	0.0970	+15	-45
412 B. L. I	5.0	-0.3	-1.7	24 13.5	6 20.3	+1 41.0	+0.0501	0.5996	0.0912	+47	-10
1 G. L. I	4.1	-0.3	-1.6	23 16.1	3 22.1	+ 4 29.4	+1.2217	0.5999	+0.0928	+85	+26
5 G. L. I	5.0	-0.3	-1.6	24 26.3	7 11.5	+ 7 03.1	+0.1530	0.6000	0.0910	+53	- 0
5 G. L. I	6.1	-0.3	-1.7	23 50.7	05 02.7	+ 5 48.5	+0.7122	0.6003	0.0915	+ 0	+10
9 G. L. I	6.2	-0.3	-1.7	23 46.0	05 17.3	+ 6 03.4	+0.0533	0.6003	0.0901	+90	+34
52 B. G. L. I	6.5	-0.37	-1.4	24 39.1	10 07.6	- 7 25.4	+0.2833	0.6003	0.0175	+50	-2
7 G. L. I	5.2	-0.3	-1.3	25 12.3	18 36.4	- 5 02.6	-0.2426	0.6004	0.0103	+28	-20
37 G. L. I	6.7	-0.39	-1.2	25 25.1	22 50	- 0 57.7	-0.4032	0.6007	-0.0123	+14	-44
39 G. L. I	6.2	-0.4	-1.2	26 11.0	7 03 10.2	- 0 20.2	-1.2216	0.6004	0.0070	-45	-14
47 G. L. I	6.3	-0.4	-1.1	26 00.5	07 34.6	+ 0 41.0	+1.0567	0.6003	0.0005	-25	-19
69 G. L. I	6.2	-0.41	-1.1	24 10.2	01 44.2	+1 47.5	+0.6582	0.6005	0.0101	+90	+14
45 G. L. I	5.5	-0.45	-1.0	24 15.1	05 37.2	+ 5 31.2	+0.6688	0.6005	-0.0212	+90	+19
52 G. L. I	6.1	-0.47	-0.9	25 00.7	09 29.11	+ 6 21.2	+0.1275	0.6005	0.0236	+33	-23
11 G. L. I	6.1	-0.47	-0.8	25 11.4	09 54.21	+ 0 37.0	+0.4770	0.6002	0.0342	+19	-41
106 B. G. L. I	6.3	-0.47	-0.6	24 31.4	15 41.71	+ 8 45.3	+0.0376	0.6003	0.0401	+44	-17
101 B. G. L. I	6.0	-0.47	-0.6	24 23.2	16 07.55	+ 8 26.5	+0.1580	0.6003	0.0512	+51	-11
4 G. L. I	5.6	-0.49	-0.5	24 34.3	18 05.7	- 6 27.1	-0.1415	0.6012	-0.0557	+34	-27
52 G. L. I	6.3	-0.50	-0.5	23 10.2	10 47.3	-4 52.4	+1.0170	0.6023	0.0601	+90	+39
5 G. L. I	6.4	-0.55	-0.3	23 40.0	8 04 44.5	- 0 06.6	+0.2445	0.6023	0.0731	+57	- 5
9 G. L. I	6.2	-0.58	-0.2	22 50.5	02 52.9	+1 56.6	+1.0513	0.6020	0.0785	+90	+38
35 B. G. L. I	6.4	-0.57	-0.1	23 21.3	05 51.7	+4 48.5	+0.2780	0.6040	0.0860	+50	- 8
2 Cancri	5.9	-0.37	-0.1	24 15.0	08 38.0	+ 7 28.3	-0.8937	0.6020	-0.0928	-11	-66

ELEMENTS OF OCCULTATIONS, 1928.

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
γ Cancri	4.7	+0.33	-0.2	+21 43.7	8 18 03.3	-7 27.6	+0.7380	0.5749	-0.1148	+90	+14
ϵ Cancri	5.2	0.28	0.7	22 20.3	9 05 06.8	+3 11.6	-1.2085	0.5658	0.1381	-54	-67
79 Cancri	6.1	0.28	0.7	22 17.4	05 32.5	+3 36.4	-1.3077	0.5654	0.1389	-58	-66
90 H. Cancri	6.1	0.27	0.7	21 34.8	06 57.9	+4 58.7	-0.7677	0.5642	0.1417	-2	-69
57 B. Leonis	6.5	0.18	0.8	19 11.7	20 39.5	-5 48.4	-0.3810	0.5523	0.1661	+21	-52
107 B. Leonis	6.3	+0.10	-0.4	+16 06.5	10 06 24.3	+3 36.7	+1.1885	0.5439	-0.1808	+90	+38
η Leonis	3.6	0.10	0.7	17 06.9	07 09.8	+4 20.7	-0.0137	0.5433	0.1819	+41	-34
42 Leonis	6.1	0.05	0.5	15 20.3	14 01.2	+10 58.6	+0.5937	0.5376	0.1908	+82	-4
46 Leonis	5.8	+0.01	0.4	14 30.4	18 59.7	-8 12.5	+0.5164	0.5335	0.1967	+75	-8
κ Leonis	5.5	-0.05	0.7	14 34.5	11 01 56.6	-1 28.6	-0.9500	0.5282	0.2041	-12	-76
ι Leonis	4.1	-0.21	-0.2	+10 55.6	20 53.7	-7 06.0	-1.0566	0.5152	-0.2193	-18	-80
ω Virginis	5.4	0.28	+0.3	8 32.0	12 04 29.1	+0 16.1	-0.1499	0.5109	0.2236	+34	-48
ξ^1 Virginis	4.8	0.31	0.2	8 39.5	08 04.8	+3 45.5	-1.0945	0.5090	0.2254	-20	-82
ν Virginis	4.2	0.32	0.7	6 56.0	08 23.4	+4 03.6	+0.7096	0.5089	0.2255	+90	-2
π Virginis	4.6	0.38	0.4	7 01.0	16 23.6	+11 50.1	-1.1990	0.5051	0.2285	-29	-83
36 B. Virginis	6.5	-0.40	+0.7	+5 57.6	17 56.6	-10 39.6	-0.4035	0.5045	-0.2290	+21	-63
ϵ Virginis	5.1	0.49	1.2	3 42.8	13 02 56.5	-1 54.7	-0.0211	0.5012	0.2311	+41	-42
250 B. Virginis	5.9	0.58	1.4	+2 15.1	12 48.2	+7 40.6	-0.7041	0.4985	0.2321	+5	-88
65 Virginis	6.0	0.83	3.0	-4 32.8	14 13 39.5	+7 51.0	+1.0369	0.4960	0.2289	+86	+15
66 Virginis	5.7	0.84	3.1	4 47.2	14 20.2	+8 30.7	+1.1467	0.4960	0.2287	+86	+24
80 Virginis	5.6	-0.92	+2.9	-5 01.7	20 25.4	-9 34.1	+0.0284	0.4964	-0.2267	+43	-40
566 B. Virginis	6.4	0.94	2.8	5 08.2	15 01 03.9	-5 03.2	-0.9015	0.4970	0.2248	-7	-90
88 Virginis	6.5	0.97	3.2	6 28.7	03 29.0	-2 42.1	+0.0397	0.4973	0.2237	+42	-40
598 B. Virginis	6.1	1.02	3.4	7 42.3	07 09.5	+0 52.3	+0.5773	0.4979	0.2220	+75	-11
623 B. Virginis	6.5	1.07	3.6	8 54.7	12 18.0	+5 52.3	+0.7782	0.4991	0.2192	+82	0
95 Virginis	5.4	-1.08	+3.6	-8 58.2	13 35.6	+7 07.7	+0.5597	0.4994	-0.2185	+73	-12
κ Virginis	4.4	1.12	3.8	9 56.3	16 57.4	+10 24.0	+0.9005	0.5003	0.2164	+81	+7
2 Librae	6.3	1.19	4.0	11 23.1	22 40.1	-8 02.9	+1.2760	0.5021	0.2126	+79	+38
4 G. Librae	6.5	1.19	4.0	11 20.5	23 21.0	-7 23.2	+1.0840	0.5023	0.2121	+79	+20
6 B. Librae	6.2	1.26	3.8	11 59.9	16 06 00.7	-0 54.6	+0.4134	0.5047	0.2070	+60	-20
22 B. Librae	6.4	-1.32	+3.7	-12 32.2	11 47.5	+4 42.2	-0.1745	0.5072	-0.2021	+28	-52
μ Librae	5.4	1.34	4.1	13 50.9	12 31.6	+5 25.2	+1.1281	0.5075	0.2015	+77	+24
ν Librae	6.2	1.51	3.5	15 17.3	17 05 04.1	-2 31.4	-0.4817	0.5158	0.1847	+10	-72
32 Librae	5.9	1.56	3.6	16 27.9	08 45.4	+1 03.4	+0.1428	0.5179	0.1604	+41	-34
34 Librae	6.0	1.57	3.5	16 21.8	09 59.4	+2 15.1	-0.1921	0.5186	0.1789	+24	-53
ζ Librae	5.6	-1.58	+3.5	-16 36.5	11 07.7	+3 21.4	-0.1234	0.5193	-0.1775	+27	-49
47 Librae	5.8	1.72	3.4	19 10.2	22 09.7	-9 56.8	+0.8146	0.5261	0.1629	+71	+4
β^1 Scorpii	2.9	1.77	3.1	19 36.5	18 03 17.1	-4 58.9	+0.4793	0.5294	0.1554	+57	-15
β^2 Scorpii	5.0	1.77	3.1	19 36.3	03 17.3	-4 58.7	+0.4744	0.5294	0.1554	+57	-16
ν Scorpii	3.9	1.79	2.7	19 16.5	06 29.0	-1 53.0	-0.3770	0.5215	0.1506	+11	-65
84 B. Scorpii	6.3	-1.83	+3.0	-20 55.5	07 40.0	-0 44.2	+1.2551	0.5323	-0.1487	+70	+42
51 G. Scorpii	6.5	1.84	3.0	21 07.5	08 52.2	+0 25.7	+1.2961	0.5330	0.1468	+69	+51
58 G. Scorpii	6.2	1.84	2.6	20 02.6	09 55.2	+1 26.5	-0.0430	0.5338	0.1452	+27	-44
η Ophiuchi	4.6	1.85	2.3	19 52.2	12 18.6	+3 45.4	-0.5747	0.5354	0.1413	-1	-82
ω Ophiuchi	4.5	1.91	2.3	21 18.8	16 06.8	+7 26.4	+0.4785	0.5380	0.1349	+55	-15
123 B. Scorpii	6.5	-1.93	+1.7	-20 16.1	20 06.7	+11 18.4	-1.1868	0.5406	-0.1279	-44	-90
24 Ophiuchi	5.5	2.03	1.6	23 02.2	19 03 37.5	-5 25.7	+0.9210	0.5456	0.1141	+67	+12
116 B. Ophiuchi	6.3	2.04	0.6	21 28.0	07 57.7	-1 11.3	-1.2645	0.5484	0.1058	-57	-80
39 Ophiuchi	5.1	2.12	0.7	24 12.6	13 17.3	+3 54.5	+1.1790	0.5518	0.0951	+66	+36
191 B. Ophiuchi	6.3	2.14	0.4	24 10.7	16 28.7	+6 59.3	+0.8518	0.5539	0.0884	+66	+8
44 Ophiuchi	4.1	-2.15	+0.3	-24 06.6	17 02.8	+7 32.3	+0.7277	0.5542	-0.0872	+66	0

JANUARY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N	S.
		$\Delta\alpha$	$\Delta\delta$								
51 Ophiuchi	4.8	-2.16	0.0	-23 54.5	19 19 18.3	+ 9 43.1	+0.3167	0.5556	-0.0825	+40	-24
63 Ophiuchi	6.1	2.24	-1.1	24 52.5	20 05 39.3	- 4 17.7	+0.6216	0.5614	0.0595	+58	- 6
4 Sagittarii	4.8	2.23	1.6	23 48.7	07 48.3	- 2 13.3	-0.6455	0.5625	0.0546	-14	-90
7 Sagittarii	5.5	2.25	1.7	24 17.0	09 07.7	- 0 56.7	-0.2077	0.5632	0.0515	+ 8	-55
9 Sagittarii	6.0	2.25	1.7	24 21.8	09 34.2	- 0 31.1	-0.1436	0.5634	0.0505	+12	-51
MARS	1.6	..	..	-23 56.1	11 46.9	+ 1 36.8	-0.7119	0.5324	-0.0451	-19	-90
1 Sagittarii	5.2	-2.26	-2.3	23 43.1	12 58.7	+ 2 46.0	-0.9954	0.5651	0.0425	-37	-90
67 B. Sagittarii	6.4	2.31	2.3	25 38.0	15 57.1	+ 5 38.0	+0.9443	0.5665	0.0355	+65	+15
70 B. Sagittarii	6.4	2.30	2.6	24 57.0	17 10.7	+ 6 48.9	+0.1690	0.5670	0.0325	+27	-32
2 Sagittarii	2.9	2.32	2.9	25 27.8	19 56.0	+ 9 28.3	+0.6388	0.5682	-0.0258	+57	- 5
NEW MOON.											
56 Aquarii	6.1	-1.87	-12.6	-14 57.5	25 03 14.8	-10 58.8	-0.1437	0.5560	+0.2044	+27	-50
69 Aquarii	5.6	1.80	12.8	14 26.4	11 04.4	- 3 25.4	+0.9672	0.5529	0.2152	+76	+13
7 Aquarii	4.4	1.79	12.7	13 58.6	11 55.6	- 2 36.0	+0.6759	0.5526	0.2163	+74	- 5
74 Aquarii	5.8	-1.77	-12.4	-12 00.2	13 41.4	- 0 53.8	-0.9618	0.5519	+0.2185	-15	-90
257 B. Aquarii	6.3	1.74	12.8	13 27.6	16 27.6	+ 1 46.8	+1.1397	0.5509	0.2219	+77	+25
290 B. Aquarii	6.3	1.67	12.4	11 05.0	23 20.9	+ 8 26.1	+0.2626	0.5484	0.2294	+53	-28
ψ^1 Aquarii	4.5	1.66	12.0	9 29.0	23 53.9	+ 8 58.0	-1.2459	0.5483	0.2300	-37	-90
ψ^2 Aquarii	4.6	1.66	12.1	9 34.7	28 00 50.0	+ 9 52.2	-0.9325	0.5480	0.2309	-12	-90
ψ^3 Aquarii	5.2	-1.65	-12.2	-10 00.5	01 19.0	+10 20.2	-0.3823	0.5478	+0.2314	+19	-64
336 B. Aquarii	6.3	1.61	12.2	9 39.9	05 56.9	- 9 11.2	+0.3494	0.5464	0.2356	+58	-23
351 B. Aquarii	6.5	1.58	11.7	7 52.0	08 57.7	- 6 16.4	-0.7719	0.5455	0.2382	- 1	-90
376 B. Aquarii	6.3	1.52	11.4	6 47.0	14 59.8	- 0 26.3	-0.4240	0.5440	0.2426	+18	-67
30 Piscium	4.7	1.45	11.3	6 25.0	21 14.9	+ 5 36.4	+0.7316	0.5426	0.2463	+84	- 3
33 Piscium	4.8	-1.44	-11.2	- 6 06.8	22 49.6	+ 7 08.0	+0.8120	0.5423	+0.2471	+84	+ 1
24 B. Ceti	6.0	1.42	11.1	5 39.1	27 01 09.2	+ 9 22.9	+0.9176	0.5419	0.2482	+85	+ 8
54 B. Ceti	6.3	1.35	10.1	2 37.2	07 47.9	- 8 11.5	-0.5067	0.5411	0.2506	+15	-73
14 Ceti	5.4	1.30	9.4	- 0 54.2	12 58.6	- 3 11.0	-0.9492	0.5406	0.2518	-10	-90
26 Ceti	6.0	1.16	8.6	+ 0 58.7	28 02 14.5	+ 9 38.9	+0.4877	0.5408	0.2522	+71	-16
33 Ceti	6.1	1.13	- 8.1	+ 2 03.6	05 24.0	-11 17.8	+0.1863	0.5410	+0.2517	+52	-31
f Piscium	5.3	1.10	7.6	3 14.0	08 47.1	- 8 21.5	-0.1527	0.5414	0.2509	+34	-49
117 G. Piscium	6.5	1.05	7.5	3 09.6	13 01.7	- 3 55.3	+0.9833	0.5420	0.2496	+90	+13
μ Piscium	5.0	1.04	6.5	5 46.3	14 32.3	- 2 27.6	-1.2872	0.5423	0.2490	-37	-85
ν Piscium	4.6	0.98	6.5	5 07.3	19 46.8	+ 2 36.4	+0.6705	0.5435	0.2466	+88	- 5
39 B. Arietis	6.5	-0.87	- 5.3	+ 7 23.4	29 06 33.7	-10 58.2	+0.9974	0.5465	+0.2398	+90	+15
64 Ceti	5.8	0.84	4.9	8 13.9	09 32.2	- 8 05.7	+0.8530	0.5475	0.2374	+90	+ 7
ξ^1 Ceti	4.6	0.83	4.7	8 30.5	10 16.9	- 7 22.6	+0.7502	0.5478	0.2368	+80	+ 1
ζ Arietis	5.5	0.78	3.9	10 17.0	15 38.2	- 2 12.1	+0.2060	0.5497	0.2319	+53	-28
25 Arietis	6.5	0.76	4.0	9 52.7	16 48.9	- 1 03.8	+0.8898	0.5502	0.2308	+90	+ 9
31 Arietis	5.7	-0.72	- 3.0	+12 08.1	20 56.3	+ 2 55.0	-0.4542	0.5520	+0.2265	+18	-63
38 Arietis	5.2	0.67	2.9	12 08.6	30 00 40.3	+ 6 31.4	+0.3759	0.5537	0.2223	+64	-18
145 B. Arietis	6.5	0.58	1.3	15 14.6	09 22.7	- 9 04.5	-1.2164	0.5579	0.2111	-33	-75
26 B. Tauri	6.4	0.43	0.2	17 35.9	22 09.1	+ 3 14.7	-0.6902	0.5646	0.1916	+ 4	-71
33 B. Tauri	6.3	0.40	- 0.5	16 18.2	31 00 26.0	+ 5 26.7	+1.0555	0.5659	0.1877	+90	+27
148 B. Tauri	5.9	-0.33	0.0	+17 06.8	06 15.6	+11 03.6	+1.2976	0.5691	+0.1773	+80	+53
163 B. Tauri	5.8	0.29	0.3	17 59.5	09 28.5	- 9 50.7	+0.9661	0.5709	0.1712	+90	+22
43 Tauri	5.5	0.25	0.9	19 25.2	12 57.4	- 6 29.6	+0.1002	0.5728	0.1643	+48	-25
ω Tauri	4.8	0.21	1.3	20 24.2	16 19.2	- 3 15.2	-0.3576	0.5746	0.1574	+22	-49
51 Tauri	5.6	0.20	1.6	21 24.3	16 46.2	- 2 49.2	-1.3052	0.5748	0.1565	-54	-68
53 Tauri	5.3	-0.20	+ 1.5	+20 58.2	17 12.8	- 2 23.7	-0.7939	0.5751	+0.1556	- 3	-70

ELEMENTS OF OCCULTATIONS, 1928.

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	α'	γ'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
224 B. Tauri	6.1	-0.18	+ 1.4	+20 39.2	31 18 26.1	- 1 13.1	-0.2832	0.5757	+0.1530	+26	-44
227 B. Tauri	5.9	0.18	1.5	20 49.0	18 54.8	- 0 45.5	-0.3762	0.5760	0.1519	+21	-50
247 B. Tauri	5.8	-0.15	+ 1.7	+21 27.6	20 44.8	+ 1 00.4	-0.7567	0.5769	+0.1480	- 1	-69

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129 H ¹ .Tauri	5.8	-0.10	+1.4	+20 32.5	1 00 58.1	+5 04.2	+0.7831	0.5791	+0.1386	+90	+15
129 Tauri	4.7	+0.03	1.8	21 29.3	11 01.6	-9 15.6	+1.0976	0.5838	0.1150	+90	+38
105 Tauri	6.0	0.05	1.9	21 36.7	12 58.1	-7 23.5	+1.1919	0.5846	0.1103	+90	+47
108 Tauri	6.2	0.09	2.0	22 12.3	15 59.0	-4 29.6	+0.9090	0.5858	0.1027	+90	+26
" Tauri	5.1	+0.10	+2.0	+22 01.4	17 30.6	-3 01.6	+1.2472	0.5863	+0.0989	+83	+55
121 Tauri	5.1	0.18	2.6	23 59.6	23 55.4	+3 08.1	-0.1814	0.5885	0.0823	+31	-32
394 B. Tauri	6.0	0.22	2.3	23 10.3	2 03 03.2	+6 08.5	+0.9030	0.5893	0.0740	+90	+28
132 Tauri	5.0	0.24	2.6	24 32.7	05 17.2	+8 17.3	-0.3422	0.5899	0.0680	+22	-40
412 B. Tauri	5.8	0.28	2.5	24 14.5	08 25.0	+11 17.7	+0.1687	0.5906	0.0596	+52	-11
5 Geminorum	5.9	+0.34	+2.4	+24 26.3	14 09.9	-7 11.1	+0.2650	0.5914	+0.0439	+58	-4
8 Geminorum	6.1	0.36	2.3	23 59.7	16 03.1	-5 22.4	+0.7969	0.5916	0.0387	+90	+24
9 Geminorum	6.2	0.36	2.3	23 46.0	16 18.8	-5 07.3	+1.0405	0.5916	0.0379	+90	+40
52 B. Geminorum	6.5	0.44	2.2	24 39.2	3 00 21.2	+2 36.0	+0.3493	0.5918	0.0156	+64	+2
6 Geminorum	3.2	0.47	2.2	25 12.3	02 53.8	+5 02.5	-0.1870	0.5917	+0.0085	+31	-26
37 Geminorum	5.7	+0.51	+2.1	+25 28.1	07 22.7	+9 20.7	-0.4476	0.5912	-0.0039	+16	-41
39 Geminorum	6.2	0.53	2.2	26 10.7	08 44.8	+10 39.5	-1.1864	0.5910	0.0077	-39	-64
40 Geminorum	6.3	0.53	2.2	26 00.8	09 00.6	+10 54.8	-1.0200	0.5910	0.0084	-21	-64
60 Geminorum	5.2	0.53	1.8	24 19.2	10 11.8	-11 56.8	+0.7117	0.5907	0.0117	+90	+22
48 Geminorum	5.8	0.56	1.6	24 15.1	14 10.0	-8 08.1	+0.7155	0.5899	0.0226	+90	+21
52 Geminorum	6.1	+0.57	+1.7	+25 00.7	15 03.1	-7 17.0	-0.0902	0.5896	-0.0251	+36	-21
A Geminorum	5.1	0.60	1.6	25 11.5	18 32.5	-3 55.9	-0.3790	0.5887	0.0346	+20	-39
176 B. Geminorum	6.3	0.63	1.2	24 31.4	4 00 27.1	+1 45.0	+0.0597	0.5866	0.0504	+45	-16
181 B. Geminorum	6.0	0.63	1.2	24 23.2	00 50.3	+2 07.2	+0.1805	0.5865	0.0514	+53	-10
A Geminorum	3.6	0.65	1.1	24 34.3	02 56.9	+4 09.0	-0.1254	0.5856	0.0570	+35	-27
82 Geminorum	6.3	+0.65	+0.8	+23 19.2	04 37.2	+5 45.5	+1.0716	0.5849	-0.0613	+90	+41
5 B. Canceri	6.4	0.68	0.6	23 46.9	09 40.0	+10 36.6	+0.2520	0.5825	0.0743	+57	-8
9 Canceri	6.2	0.68	0.4	22 50.6	11 50.1	-11 18.4	+1.0609	0.5814	0.0798	+90	+38
35 B. Canceri	6.4	0.70	0.3	23 21.3	14 51.7	-8 23.6	+0.2758	0.5798	0.0872	+59	-9
A Canceri	5.9	0.71	+0.2	24 15.0	17 40.4	-5 41.3	-0.9096	0.5781	0.0940	-12	-66
7 Canceri	4.7	+0.72	-0.5	+21 43.7	5 03 12.8	+3 29.8	+0.7149	0.5721	-0.1161	+90	+13
90 H ¹ .Cancri	6.1	0.74	1.3	21 34.8	16 14.3	-7 56.9	-0.8233	0.5629	0.1433	-5	-69
57 B. Leonis	6.5	0.72	2.1	19 11.7	6 05 59.7	+5 19.8	-0.4612	0.5525	0.1680	+17	-57
107 B. Leonis	6.3	0.68	2.5	16 06.5	15 45.1	-9 14.5	+1.0914	0.5450	0.1830	+90	+29
7 Leonis	3.6	0.69	2.6	17 06.8	16 30.6	-8 30.5	-0.1137	0.5444	0.1841	+36	-40
42 Leonis	6.1	+0.66	-2.8	+15 20.3	23 21.3	-1 53.3	+0.4806	0.5392	-0.1933	+72	-10
46 Leonis	5.8	0.64	3.0	14 30.4	7 04 19.0	+2 54.8	+0.3933	0.5356	0.1992	+66	-14
k Leonis	5.5	0.61	3.3	14 34.5	11 14.1	+9 36.8	-1.0852	0.5307	0.2068	-21	-76
l Leonis	4.1	0.51	3.7	10 55.5	8 06 03.3	+3 51.6	-1.2244	0.5186	0.2224	-32	-80
o Virginis	5.4	0.45	3.6	8 31.9	13 34.7	+11 09.6	-0.3326	0.5145	0.2267	+24	-58
51 Virginis	4.8	+0.44	-3.8	+8 39.4	17 08.4	-9 22.9	-1.2802	0.5126	-0.2284	-37	-82
7 Virginis	4.2	0.42	3.4	6 55.9	17 26.8	-9 05.0	+0.5183	0.5125	0.2285	+74	-13
7 Virginis	4.6	0.38	3.8	7 00.9	9 01 22.3	-1 23.3	-1.3969	0.5089	0.2316	-62	-67
36 B. Virginis	6.5	0.36	3.6	5 57.6	02 54.3	+0 06.1	-0.6062	0.5082	0.2320	+10	-79
c Virginis	5.1	0.29	3.4	3 42.7	11 48.8	+8 45.4	-0.2375	0.5048	0.2340	+29	-54
150 B. Virginis	5.9	+0.22	-3.3	+2 15.0	21 34.4	-5 45.4	-0.9308	0.5020	-0.2348	-8	-88

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	α'	γ'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
65 Virginis	6.0	+0.01	-2.2	4 32.9	10 22 12.4	-5 48.4	+0.7820	0.4986	-0.2308	+86	0
66 Virginis	5.7	+0.01	2.1	4 47.3	22 52.8	-5 09.0	+0.8910	0.4985	0.2305	+86	+6
1 Virginis	4.8	-0.03	1.9	5 53.1	11 02 57.9	-1 10.5	+1.1610	0.4985	0.2291	+85	+25
80 Virginis	5.6	0.04	2.2	5 01.8	04 55.3	+0 43.6	-0.2285	0.4986	0.2283	+29	-55
566 B. Virginis	6.4	0.08	2.4	5 08.2	09 32.1	+5 12.8	-1.1593	0.4988	0.2262	-27	-90
88 Virginis	6.5	-0.11	-2.0	6 28.8	11 56.4	+7 33.2	-0.2208	0.4990	-0.2250	+28	-54
598 B. Virginis	6.1	0.14	1.7	7 42.3	15 35.7	+11 06.4	+0.3145	0.4994	0.2231	+57	-25
623 B. Virginis	6.5	0.19	1.5	8 54.8	20 42.9	-7 54.9	+0.5138	0.5002	0.2201	+70	-15
95 Virginis	5.4	0.20	1.5	8 58.3	22 00.2	-6 39.8	+0.2952	0.5004	0.2193	+56	-26
96 Virginis	6.5	0.22	1.2	9 59.7	23 14.4	-5 27.7	+1.1561	0.5007	0.2184	+81	+25
1 Virginis	4.4	-0.24	-1.3	9 56.4	12 01 21.3	-3 24.3	+0.6352	0.5011	-0.2170	+76	-8
2 Libræ	6.3	0.30	1.0	11 23.2	07 03.2	+2 08.1	+1.0103	0.5024	0.2130	+79	+15
4 G. Libræ	6.5	0.30	1.0	11 20.6	07 44.0	+2 47.8	+0.8183	0.5026	0.2124	+79	+2
6 B. Libræ	6.2	0.37	1.0	12 00.0	14 23.4	+9 15.8	+0.1483	0.5045	0.2070	+45	-34
122 B. Libræ	6.4	0.42	1.0	12 32.3	20 10.2	-9 07.3	-0.4390	0.5066	0.2019	+14	-69
u Libræ	5.4	-0.44	-0.6	13 51.0	20 54.4	-8 24.4	+0.8645	0.5068	-0.2012	+77	+6
o Libræ	6.2	0.61	0.7	15 17.4	13 13 29.5	+7 41.9	-0.7407	0.5140	0.1837	-4	-90
32 Libræ	5.9	0.65	0.5	16 28.0	17 11.9	+11 17.7	-0.1130	0.5158	0.1793	+28	-48
34 Libræ	6.0	0.66	0.6	16 21.8	18 26.1	-11 30.3	-0.4478	0.5164	0.1777	+10	-70
5 Libræ	5.6	0.67	0.5	16 36.6	19 34.9	-10 23.5	-0.3783	0.5170	0.1763	+14	-65
47 Libræ	5.8	-0.80	-0.2	19 10.3	14 06 41.0	+0 22.4	+0.5703	0.5230	-0.1614	+64	-10
β^1 Scorpii	2.9	0.86	0.3	19 36.6	11 50.7	+5 22.5	+0.2386	0.5261	0.1538	+43	-29
β^2 Scorpii	5.0	0.86	-0.3	19 36.4	11 51.0	+5 22.8	+0.2338	0.5261	0.1538	+43	-29
α^1 Scorpii	4.3	0.88	0.0	20 28.5	12 30.5	+6 01.1	+1.0808	0.5265	0.1528	+70	+24
α^2 Scorpii	4.6	0.88	0.0	20 40.5	12 47.9	+6 17.9	+1.2656	0.5267	0.1524	+70	+44
ν Scorpii	3.9	-0.89	-0.6	19 16.5	15 04.2	+8 30.0	-0.6173	0.5280	-0.1489	-2	-86
84 B. Scorpii	6.3	0.92	-0.1	20 55.6	16 15.7	+9 39.3	+1.0211	0.5287	0.1471	+70	+18
51 G. Scorpii	6.5	0.93	0.0	21 07.6	17 28.6	+10 49.9	+1.0634	0.5295	0.1451	+69	+22
58 G. Scorpii	6.2	0.94	-0.5	20 02.6	18 32.1	+11 51.3	-0.2788	0.5301	0.1434	+15	-59
μ Ophiuchi	4.6	0.96	0.7	19 52.2	20 56.8	-9 48.6	-0.8099	0.5316	0.1395	-14	-90
ω Ophiuchi	4.5	-1.01	-0.4	21 18.8	15 00 47.1	-6 05.5	+0.2510	0.5340	-0.1331	+42	-28
24 Ophiuchi	5.5	1.15	0.5	23 02.3	12 24.4	+5 09.1	+0.7087	0.5413	0.1122	+67	-2
39 Ophiuchi	5.1	1.26	0.8	24 12.6	22 10.2	-9 24.8	+0.9802	0.5474	0.0931	+66	+17
191 B. Ophiuchi	6.3	1.30	1.1	24 10.8	16 01 23.4	-6 18.1	+0.6564	0.5493	0.0865	+62	-4
44 Ophiuchi	4.1	1.30	1.2	24 06.7	01 57.9	-5 44.7	+0.5327	0.5497	0.0853	+54	-12
51 Ophiuchi	4.8	-1.32	-1.4	23 54.5	04 14.8	-3 32.5	+0.1235	0.5510	-0.0805	+29	-35
63 Ophiuchi	6.1	1.44	1.9	24 52.5	14 41.9	+6 32.9	+0.4449	0.5570	0.0576	+46	-17
4 Sagittarii	4.8	1.44	2.4	23 48.7	16 52.0	+8 38.4	-0.8224	0.5582	0.0528	-25	-90
7 Sagittarii	5.5	1.46	2.4	24 17.0	18 12.2	+9 55.8	-0.3812	0.5589	0.0497	-1	-66
9 Sagittarii	6.0	1.47	2.4	24 21.9	18 39.0	+10 21.7	-0.3162	0.5591	0.0487	+3	-62
1 Sagittarii	5.2	-1.49	-2.8	23 43.1	22 05.2	-10 19.5	-1.1645	0.5609	-0.0407	-51	-90
67 B. Sagittarii	6.4	1.54	2.5	25 38.0	17 01 05.2	-7 25.9	+0.7846	0.5624	0.0336	+65	+4
70 B. Sagittarii	6.4	1.54	2.8	24 57.0	02 19.4	-6 14.4	+0.0096	0.5629	0.0307	+78	-41
λ Sagittarii	2.9	1.58	3.0	25 27.8	05 06.0	-3 33.8	+0.4850	0.5642	0.0240	+45	-14
24 Sagittarii	5.7	1.58	3.5	24 05.3	07 39.8	-1 05.4	-1.0424	0.5653	0.0178	-42	-90
126 B. Sagittarii	5.7	-1.63	-3.7	25 05.2	12 19.7	+3 24.2	-0.0309	0.5672	-0.0064	+14	-44
162 B. Sagittarii	6.4	1.67	4.2	24 58.5	18 04.6	+8 56.6	-0.1443	0.5692	+0.0079	+8	-51
127 G. Sagittarii	6.4	1.68	4.3	25 02.7	18 57.1	+9 47.1	-0.0627	0.5695	0.0100	+12	-46
172 B. Sagittarii	5.8	1.69	4.4	24 56.9	19 49.4	+10 37.6	-0.1553	0.5698	0.0122	+7	-51
189 B. Sagittarii	6.1	1.70	4.6	24 46.3	22 16.0	-11 01.2	-0.3050	0.5705	0.0184	+1	-61
201 B. Sagittarii	5.9	-1.74	-4.5	26 01.8	18 00 21.1	-9 00.7	+1.0741	0.5711	+0.0236	+64	+26

ELEMENTS OF OCCULTATIONS, 1928.

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THE STAR'S				AT CONJUNCTION IN R.A.						Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle. H	Y	x	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
ψ Sagittarii	4.8	-1.73	-4.8	-25 23.0	18 01 20.0	-8 04.0	+0.4120	0.5713	+0.0261	+41	-18
208 B. Sagittarii	6.1	1.72	5.0	24 18.3	01 21.1	-8 02.9	-0.7321	0.5713	0.0261	-21	-90
χ Sagittarii	4.9	1.75	5.3	24 39.1	05 26.2	-4 06.9	-0.2358	0.5723	0.0365	+6	-56
49 Sagittarii	5.5	1.74	5.5	24 06.4	05 32.3	-4 01.1	-0.8089	0.5723	0.0368	-25	-90
51 Sagittarii	5.8	1.78	5.7	24 52.8	09 56.7	+0 13.6	+0.1957	0.5731	0.0479	+30	-31
h Sagittarii	4.7	-1.78	-5.7	-25 02.7	10 13.5	+0 29.8	+0.3845	0.5732	+0.0486	+41	-20
53 Sagittarii	6.3	1.77	6.1	23 35.7	11 33.1	+1 46.4	-1.0794	0.5734	0.0520	-43	-90
274 B. Sagittarii	6.1	1.77	6.1	23 35.8	11 40.4	+1 53.4	-1.0703	0.5734	0.0523	-42	-90
308 B. Sagittarii	6.3	1.81	6.6	24 07.4	17 36.1	+7 35.9	-0.1595	0.5740	0.0673	+13	-52
329 B. Sagittarii	6.1	1.81	7.0	22 56.3	20 34.7	+10 27.9	-1.1917	0.5742	0.0747	-51	-90
336 B. Sagittarii	6.5	-1.81	-7.1	-22 48.0	21 33.5	+11 24.5	-1.2611	0.5742	+0.0772	-59	-79
36 B. Capricorni	6.2	1.85	8.1	22 38.0	19 08 20.0	-2 13.1	-0.4546	0.5741	0.1038	0	-72
NEW MOON.											
54 B. Ceti	6.3	-1.55	-10.8	-2 37.2	23 15 05.8	+0 54.1	-0.3143	0.5493	+0.2564	+25	-60
14 Ceti	5.4	-1.52	-10.3	-0 54.2	20 07.8	+5 45.9	-0.7412	0.5488	+0.2575	+2	-90
26 Ceti	6.0	1.43	9.5	+0 58.7	24 09 02.0	-5 46.1	+0.6998	0.5487	0.2575	+90	-4
33 Ceti	6.1	1.41	9.1	2 03.6	12 06.5	-2 47.8	+0.4071	0.5488	0.2569	+66	-20
f Piscium	5.3	1.39	8.7	3 14.0	15 24.2	+0 23.1	+0.0772	0.5491	0.2560	+46	-37
117 G. Piscium	6.5	1.36	8.5	3 09.6	19 32.2	+4 22.8	+1.2056	0.5495	0.2544	+90	+29
μ Piscium	5.0	-1.36	-7.8	+5 46.3	21 00.6	+5 48.2	-1.0365	0.5497	+0.2538	-15	-85
ν Piscium	4.6	1.31	7.7	5 07.3	25 02 07.3	+10 44.4	+0.9052	0.5504	0.2511	+90	+8
39 B. Arietis	6.5	1.22	6.6	7 23.3	12 39.5	-3 04.9	+1.2407	0.5527	0.2435	+90	+34
64 Ceti	5.8	1.20	6.2	8 13.9	15 34.2	-0 16.3	+1.1004	0.5534	0.2409	+90	+22
ξ Ceti	4.6	1.19	6.1	8 30.5	16 18.0	+0 26.0	+0.9992	0.5536	0.2402	+90	+17
ξ Arietis	5.5	-1.15	-5.2	+10 17.0	21 32.9	+5 30.0	+0.4638	0.5551	+0.2350	+70	-14
25 Arietis	6.5	1.14	5.3	9 52.7	22 42.3	+6 37.0	+1.1426	0.5555	0.2337	+90	+27
31 Arietis	5.7	1.11	4.4	12 08.1	26 02 45.3	+10 31.5	-0.1882	0.5568	0.2291	+32	-47
38 Arietis	5.2	1.07	4.2	12 08.6	06 25.6	-9 56.0	+0.6372	0.5580	0.2246	+85	-4
145 B. Arietis	6.5	1.00	2.5	15 34.6	15 00.4	-1 39.3	-0.9431	0.5612	0.2127	-11	-75
26 B. Tauri	6.4	-0.86	-1.1	+17 35.8	27 03 38.7	+10 31.7	-0.4217	0.5664	+0.1922	+19	-57
33 B. Tauri	6.3	0.82	1.4	16 18.2	05 54.6	-11 17.3	+1.3176	0.5674	0.1882	+77	+56
163 B. Tauri	5.8	0.71	-0.4	17 59.5	14 54.1	-2 37.7	+1.2271	0.5711	0.1710	+90	+44
43 Tauri	5.5	0.68	+0.3	19 25.2	18 22.4	+0 42.8	+0.3608	0.5726	0.1639	+64	-12
ω Tauri	4.8	0.64	0.8	20 24.2	21 43.9	+3 56.9	-0.0986	0.5740	0.1568	+36	-34
51 Tauri	5.6	-0.64	+1.2	+21 24.3	22 10.8	+4 22.8	-1.0462	0.5741	+0.1559	-21	-69
53 Tauri	5.3	0.63	1.0	20 58.2	22 37.4	+4 48.3	-0.5354	0.5743	0.1549	+12	-60
56 Tauri	5.2	0.63	1.3	21 36.1	22 41.3	+4 52.1	-1.1671	0.5743	0.1548	-32	-69
224 B. Tauri	6.1	0.61	1.0	20 39.2	23 50.7	+5 58.9	-0.0257	0.5748	0.1523	+40	-30
227 B. Tauri	5.9	0.60	1.1	20 49.0	28 00 19.4	+6 26.5	-0.1190	0.5750	0.1512	+35	-35
67 Tauri	5.4	-0.60	+1.5	+22 02.2	01 04.8	+7 10.2	-1.2470	0.5753	+0.1496	-42	-68
247 B. Tauri	5.8	0.58	1.4	21 27.6	02 09.4	+8 12.4	-0.5010	0.5757	0.1472	+14	-57
129 H ¹ Tauri	5.8	0.52	1.2	20 32.5	06 23.1	-11 43.6	+1.0368	0.5773	0.1376	+90	+31
τ Tauri	4.3	0.50	2.1	22 49.2	07 59.2	-10 11.1	-1.0675	0.5779	0.1339	-23	-68
103 Tauri	5.5	0.36	2.9	24 10.3	18 29.1	-0 05.3	-1.1752	0.5813	0.1087	-35	-66
108 Tauri	6.2	-0.31	+2.3	+22 12.3	21 28.8	+2 47.5	+1.1514	0.5821	+0.1011	+90	+44
121 Tauri	5.1	0.19	3.1	23 59.6	29 05 29.7	+10 29.8	+0.0482	0.5839	0.0806	+45	-20
394 B. Tauri	6.0	0.15	2.8	23 10.3	08 39.6	-10 27.7	+1.1342	0.5845	0.0723	+90	+46
132 Tauri	5.0	0.12	3.3	24 32.8	10 55.2	-8 17.3	-0.1202	0.5848	0.0603	+35	-27
412 B. Tauri	5.8	-0.07	3.2	24 14.5	14 05.4	-5 14.5	+0.3895	0.5852	0.0578	+67	0
5 Geminorum	5.9	+0.01	+1.3	+24 26.3	19 55.2	+0 21.7	+0.4787	0.5855	+0.0421	+74	+7

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
8 Geminorum	6.1	+0.04	+3.1	+23 59.7	29 21 50.1	+2 12.1	+1.0116	0.5855	+0.0369	+90	+38
9 Geminorum	6.2	+0.04	+3.1	+23 46.1	22 06.1	+2 27.4	+1.2565	0.5855	+0.0362	+78	+61

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52 B. Geminorum	6.5	+0.16	+3.2	+24 39.2	1 06 16.4	+10 18.6	+0.5490	0.5852	+0.0139	+81	+13
ε Geminorum	3.2	0.20	3.4	25 12.3	08 51.6	-11 12.2	+0.0049	0.5849	+0.0069	+42	-15
37 Geminorum	5.7	0.26	3.4	25 28.1	13 25.4	-6 49.1	-0.2651	0.5841	-0.0055	+27	-30
39 Geminorum	6.2	0.28	3.6	26 10.7	14 49.0	-5 28.8	-1.0121	0.5839	0.0093	-21	-64
40 Geminorum	6.3	0.28	3.5	26 00.9	15 05.1	-5 13.2	-0.8448	0.5838	0.0100	-8	-64
ω Geminorum	5.2	+0.29	+3.0	+24 19.2	16 17.7	-4 03.4	+0.8990	0.5836	-0.0133	+90	+33
48 Geminorum	5.8	0.34	2.9	24 15.1	20 20.5	-0 10.1	+0.8962	0.5826	0.0241	+90	+32
52 Geminorum	6.1	0.36	3.0	25 00.7	21 14.6	+0 42.0	+0.0823	0.5823	0.0265	+47	-13
Δ Geminorum	5.1	0.40	3.0	25 11.5	2 00 48.2	+4 07.3	-0.2152	0.5813	0.0360	+30	-30
176 B. Geminorum	6.3	0.47	2.5	24 31.4	06 50.0	+9 55.3	+0.2166	0.5791	0.0517	+55	-8
181 B. Geminorum	6.0	+0.47	+2.5	+24 23.2	07 13.7	+10 18.1	+0.3377	0.5789	-0.0527	+63	-2
κ Geminorum	3.6	0.50	2.4	24 34.4	09 22.9	-11 37.6	+0.0251	0.5781	0.0582	+43	-19
82 Geminorum	6.3	0.51	2.1	23 19.3	11 05.4	-9 59.0	+1.2296	0.5774	0.0626	+84	+56
5 B. Cancri	6.4	0.56	2.0	23 47.0	16 14.5	-5 01.4	+0.3930	0.5750	0.0754	+67	-1
4 Cancri	6.2	0.58	2.3	25 17.4	16 31.2	-4 45.4	-1.2056	0.5749	0.0761	-40	-65
9 Cancri	6.2	+0.59	+1.6	+22 50.6	18 27.4	-2 53.6	+1.2049	0.5739	-0.0808	+89	+52
35 B. Cancri	6.4	0.62	1.6	23 21.4	21 32.8	+0 05.0	+0.4066	0.5723	0.0882	+68	-2
λ Cancri	5.9	0.65	1.7	24 15.0	3 00 25.0	+2 50.9	-0.7954	0.5708	0.0950	-4	-66
28 Cancri	6.1	0.68	1.5	24 23.1	03 50.4	+6 08.7	-1.2767	0.5689	0.1029	-53	-66
γ Cancri	4.7	0.72	+0.6	21 43.7	10 09.4	-11 45.9	+0.8233	0.5651	0.1169	+90	+18
ξ Cancri	5.2	+0.81	0.0	+22 20.3	21 32.5	-0 47.1	-1.2875	0.5578	-0.1404	-50	-68
79 Cancri	6.1	0.81	0.0	22 17.4	21 58.8	-0 21.7	-1.2986	0.5576	0.1413	-54	-67
90 H. Cancri	6.1	0.81	-0.3	21 34.8	23 26.5	+1 03.0	-0.7576	0.5566	0.1441	-1	-69
57 B. Leonis	6.5	0.87	1.5	19 11.7	4 13 27.0	-9 25.3	-0.4253	0.5471	0.1689	+19	-55
107 B. Leonis	6.3	0.88	2.5	16 06.5	23 21.8	+0 09.8	+1.1136	0.5404	0.1840	+90	+30
η Leonis	3.6	+0.89	-2.4	+17 06.8	5 00 08.0	+0 54.6	-0.1016	0.5399	-0.1851	+36	-39
42 Leonis	6.1	0.90	3.0	15 20.3	07 04.6	+7 37.8	+0.4788	0.5353	0.1944	+72	-10
46 Leonis	5.8	0.90	3.4	14 30.4	12 06.2	-11 30.2	+0.3778	0.5321	0.2005	+64	-16
h Leonis	5.5	0.91	3.8	14 34.5	19 06.2	-4 43.3	-1.1267	0.5277	0.2082	-24	-76
t Leonis	4.1	0.90	4.9	10 55.5	6 14 05.2	-10 18.8	-1.3145	0.5173	0.2243	-43	-78
ω Virginis	5.4	+0.87	-5.2	+8 31.9	21 39.2	-2 58.1	-0.4387	0.5137	-0.2289	+19	-65
r Virginis	4.2	0.86	5.4	6 55.9	7 01 32.3	+0 48.2	+0.4046	0.5120	0.2308	+66	-19
36 B. Virginis	6.5	0.84	5.7	5 57.5	11 01.6	+10 01.1	-0.7463	0.5083	0.2345	+2	-85
c Virginis	5.1	0.80	5.9	3 42.7	19 56.7	-5 18.9	-0.3986	0.5054	0.2366	+21	-64
250 B. Virginis	5.9	0.77	6.1	+2 14.9	8 05 42.2	+4 10.2	-1.1152	0.5030	0.2375	-21	-88
65 Virginis	6.0	+0.65	-5.8	-4 33.0	9 06 16.8	+4 03.9	+0.5484	0.5002	-0.2334	+75	-13
66 Virginis	5.7	0.64	5.8	4 47.4	06 57.1	+4 43.1	+0.6562	0.5002	0.2332	+83	-7
72 Virginis	6.1	0.62	5.6	6 06.0	10 10.3	+7 51.0	+1.3526	0.5002	0.2320	+81	+46
l Virginis	4.8	0.62	5.7	5 53.2	11 01.4	+8 40.7	+0.9190	0.5002	0.2316	+85	+8
80 Virginis	5.6	0.61	5.8	5 01.9	12 58.4	+10 34.4	-0.4745	0.5003	0.2308	+16	-71
88 Virginis	6.5	+0.57	-5.7	-6 28.8	19 58.0	-6 37.5	-0.4783	0.5007	-0.2274	+15	-71
598 B. Virginis	6.1	0.54	5.5	7 42.4	23 36.6	-3 05.0	+0.0518	0.5011	0.2254	+43	-39
623 B. Virginis	6.5	0.52	5.3	8 54.8	10 04 42.7	+1 52.6	+0.2439	0.5018	0.2223	+53	-29
95 Virginis	5.4	0.50	5.4	8 58.3	05 59.8	+3 07.6	+0.0234	0.5020	0.2214	+41	-41
96 Virginis	6.5	0.50	5.1	9 59.7	07 13.8	+4 19.5	+0.8833	0.5022	0.2206	+81	+6
κ Virginis	4.4	+0.48	-5.2	-9 56.4	09 20.3	+6 22.4	+0.3594	0.5026	-0.2191	+60	-23

ELEMENTS OF OCCULTATIONS, 1928.

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THE STAR'S				AT CONJUNCTION IN R.A.						Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	X	Y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$		d h m	h m					
2 Librae	6.3	+0.45	-4.9	-11 23.2	10 15 01.2	+11 53.8	+0.7280	0.5038	-0.2148	+79	-3
7 G. Librae	6.5	0.44	5.0	11 20.7	15 42.0	-11 26.5	+0.5351	0.5040	0.2143	+70	-13
6 B. Librae	6.2	0.38	4.8	12 00.1	22 20.4	-4 59.4	-0.7426	0.5057	0.2087	+30	-50
22 B. Librae	6.4	0.35	4.8	12 32.3	11 04.6	+0 37.0	-0.7360	0.5074	0.2033	-2	-90
11 Librae	5.4	0.35	4.5	13 51.1	04 50.8	+1 19.8	+0.5600	0.5076	0.2026	+70	-11
1 Librae	5.3	+0.28	-4.0	-15 58.8	13 56.5	+10 09.8	+1.1281	0.5108	-0.1931	+75	+25
6 Librae	6.2	0.22	4.3	15 17.5	21 26.1	-6 33.8	-1.0502	0.5138	0.1844	-24	-90
32 Librae	5.9	0.18	4.0	16 28.1	12 01 08.9	-2 57.5	-0.4224	0.5154	0.1798	+12	-68
34 Librae	6.0	0.17	4.0	16 21.9	02 23.3	-1 45.3	-0.7588	0.5160	0.1782	-7	-90
5 Librae	5.6	0.16	4.0	16 36.7	03 32.3	-0 38.4	-0.6804	0.5165	0.1767	-3	-90
2 Librae	4.9	+0.07	-3.0	-19 57.2	13 50.0	+9 20.7	+1.2628	0.5213	-0.1626	+71	+42
47 Librae	5.8	0.06	3.3	19 10.3	14 40.9	+10 10.1	+0.2603	0.5218	0.1614	+45	-27
β^1 Scorpil	2.9	0.01	3.2	19 36.6	19 52.3	-8 48.0	-0.0727	0.5244	0.1536	+26	-46
β^2 Scorpil	5.0	0.01	3.2	19 36.4	19 52.5	-8 47.0	-0.0776	0.5244	0.1536	+26	-46
ω^1 Scorpil	4.3	-0.01	3.0	20 28.6	20 32.3	-8 09.3	+0.7823	0.5247	0.1526	+70	+2
ω^2 Scorpil	4.6	0.00	-2.9	-20 40.6	20 49.8	-7 52.4	+0.9589	0.5249	-0.1521	+70	+14
1 Scorpil	3.9	-0.02	3.4	19 16.6	23 07.0	-5 39.4	-0.9324	0.5260	0.1485	-21	-90
84 B. Scorpil	6.3	0.03	2.9	20 55.6	13 00 19.0	-4 29.6	+0.7138	0.5266	0.1466	+70	-2
51 G. Scorpil	6.5	0.04	2.8	21 07.6	01 32.3	-3 18.6	+0.7566	0.5273	0.1447	+69	+1
58 G. Scorpil	6.2	0.05	3.2	20 02.7	02 36.3	-2 16.7	-0.5920	0.5278	0.1429	-2	-83
17 Ophiuchi	4.0	-0.07	-3.3	-19 52.3	05 02.1	+0 04.5	-1.1255	0.5291	0.1390	-36	-90
10 Ophiuchi	4.5	0.12	2.0	21 18.9	08 54.4	+3 49.5	-0.0581	0.5311	0.1324	+25	-45
24 Ophiuchi	5.5	0.24	2.5	23 02.3	20 58.6	-8 49.7	+0.4172	0.5375	0.1112	+49	-19
39 Ophiuchi	5.1	0.35	2.3	24 12.6	14 06 31.5	+0 44.4	+0.6869	0.5428	0.0920	+65	-3
191 B. Ophiuchi	6.3	0.39	2.4	24 10.8	09 47.4	+3 53.7	+0.3632	0.5445	0.0853	+43	-21
44 Ophiuchi	4.1	-0.39	-2.5	-24 06.7	10 22.4	+4 27.4	+0.2390	0.5445	0.0841	+36	-28
51 Ophiuchi	4.8	0.42	2.6	23 54.6	12 41.1	+6 41.5	-0.1712	0.5460	0.0792	+13	-52
63 Ophiuchi	6.1	0.54	2.6	24 52.5	23 17.8	-7 03.5	+0.1617	0.5513	0.0564	+29	-33
4 Sagittari	4.8	0.56	3.0	23 48.7	15 01 30.0	-4 55.8	-1.1132	0.5523	0.0514	-45	-90
7 Sagittari	5.5	0.58	2.9	24 17.0	02 51.4	-3 37.1	-0.6674	0.5530	0.0484	-16	-90
9 Sagittari	6.0	-0.58	-2.9	-24 21.9	03 18.7	-3 10.8	0.6015	0.5531	-0.0474	-12	-86
67 B. Sagittarii	6.4	0.66	2.6	25 38.0	09 51.4	+3 08.2	+0.5149	0.5560	0.0323	+48	-12
70 B. Sagittarii	6.4	0.67	2.9	24 57.0	11 06.9	+4 21.0	-0.2648	0.5566	0.0294	+4	-58
2 Sagittarii	2.9	0.70	2.9	25 27.8	13 56.4	+7 04.6	+0.2175	0.5577	0.0228	+28	-29
126 B. Sagittarii	5.7	0.78	3.2	25 05.2	21 17.9	-9 49.6	-0.2936	0.5604	-0.0052	0	-60
σ Sagittarii	2.1	-0.84	-3.0	-26 23.3	16 01 48.1	-5 29.1	+1.1078	0.5619	+0.0057	+64	+30
162 B. Sagittarii	6.4	0.84	3.5	24 58.5	03 09.1	-4 11.0	-0.4003	0.5622	0.0090	-5	-68
127 G. Sagittarii	6.4	0.85	3.5	25 02.7	04 02.6	-3 19.4	-0.3169	0.5626	0.0112	-1	-62
172 B. Sagittarii	5.8	0.86	3.6	24 56.9	04 55.9	-2 28.0	-0.4000	0.5628	0.0133	-6	-68
189 B. Sagittarii	6.1	0.89	3.7	24 46.3	07 25.2	-0 04.1	-0.5564	0.5635	0.0195	-13	-81
201 B. Sagittarii	5.9	-0.92	-3.4	-26 01.8	09 32.6	+1 58.8	+0.8365	0.5640	+0.0247	+64	+7
19 Sagittarii	4.8	0.92	3.7	25 23.0	10 32.6	+2 56.5	+0.1706	0.5643	0.0272	+27	-32
208 B. Sagittarii	6.1	0.92	4.0	24 18.3	10 33.7	+2 57.5	-0.9824	0.5643	0.0272	-37	-90
χ Sagittarii	4.9	0.96	4.1	24 39.1	14 43.4	+6 58.1	-0.4759	0.5652	0.0375	-6	-74
49 Sagittarii	5.5	0.96	4.3	24 06.4	14 49.6	+7 04.2	-1.0533	0.5652	0.0377	-41	-90
51 Sagittarii	5.8	-1.01	-4.2	-24 52.7	19 18.8	+11 23.7	-0.0342	0.5660	+0.0488	+17	-44
h Sagittarii	4.7	1.01	4.2	25 02.7	19 35.9	+11 40.1	+0.1565	0.5661	0.0496	+28	-33
308 B. Sagittarii	6.3	1.08	4.9	24 07.4	17 03 06.4	-5 05.8	-0.3792	0.5671	0.0682	+1	-66
36 B. Capricorni	6.2	1.21	5.9	22 38.0	18 05.0	+9 20.0	-0.6484	0.5677	0.1045	-10	-90
17 Capricorni	5.8	1.26	6.4	21 46.7	18 01 10.1	-7 50.5	-0.7387	0.5675	0.1213	-13	-90
χ Capricorni	5.3	-1.33	-6.9	-21 29.2	10 43.0	+1 21.6	+0.2207	0.5666	+0.1429	+40	-29

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declination.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
27 Capricorni	6.1	-1.33	-7.1	-20 50.9	18 11 08.6	+ 1 46.2	-0.3791	0.5666	+0.1439	+ 8	-66
ϕ Capricorni	5.3	1.35	7.1	20 57.2	13 44.7	+ 4 16.7	+0.1118	0.5662	0.1496	+35	-36
33 Capricorni	5.3	1.37	7.2	21 09.6	17 23.8	+ 7 47.8	+0.8854	0.5657	0.1574	+69	+ 9
128 B. Capricorni	6.5	1.38	7.7	19 27.9	19 54.8	+10 13.4	-0.4616	0.5654	0.1627	+ 6	-72
37 Capricorni	5.7	1.40	7.6	20 24.5	21 59.7	-11 46.3	+0.8535	0.5650	0.1670	+70	+ 7
ϵ Capricorni	4.7	-1.40	-7.7	-19 47.5	22 57.4	-10 50.6	+0.3801	0.5648	+0.1690	+52	-21
κ Capricorni	4.8	1.41	7.9	19 11.8	19 01 21.5	- 8 31.7	+0.1806	0.5644	0.1738	+41	-32
143 B. Capricorni	6.1	1.42	7.8	19 57.2	01 36.0	- 8 17.7	+0.9984	0.5644	0.1743	+71	+16
152 B. Capricorni	6.5	1.42	8.5	17 11.1	04 38.3	- 5 21.9	-1.3033	0.5639	0.1803	-53	-80
154 B. Capricorni	6.1	1.43	8.2	18 57.7	05 15.7	- 4 45.9	+0.6308	0.5637	0.1815	+68	- 7
161 B. Capricorni	6.4	-1.45	-8.4	-18 15.2	09 48.7	- 0 22.7	+0.7491	0.5629	+0.1901	+72	0
29 Aquarii(mean)	6.5	1.45	8.6	-17 18.9	09 55.7	- 0 16.0	-0.1872	0.5628	0.1903	+24	-53
NEW MOON.											
64 Ceti	5.8	-1.46	-6.8	+ 8 13.9	23 23 54.8	+ 9 52.1	+1.2775	0.5627	+0.2471	+90	+39
ξ^1 Ceti	4.6	-1.46	-6.6	+ 8 30.5	24 00 37.2	+10 33.0	+1.1792	0.5630	+0.2464	+90	+29
ξ Arietis	5.5	1.44	6.0	10 17.0	05 41.8	- 8 33.3	+0.6619	0.5647	0.2410	+88	- 4
25 Arietis	6.5	1.43	6.1	9 52.7	06 48.9	- 7 28.6	+1.3321	0.5650	0.2398	+83	+48
31 Arietis	5.7	1.41	5.3	12 08.1	10 43.8	- 3 42.2	+0.0290	0.5665	0.2350	+43	-37
38 Arietis	5.2	1.39	5.0	12 08.5	14 16.7	- 0 17.1	+0.8476	0.5678	0.2303	+90	+ 8
σ Arietis	5.4	-1.39	-4.2	+14 47.1	17 01.6	+ 2 21.8	-1.1428	0.5688	+0.2264	-25	-76
145 B. Arietis	6.5	1.35	3.6	15 34.6	22 34.4	+ 7 42.4	-0.6957	0.5709	0.2180	+ 4	-75
26 B. Tauri	6.4	1.26	2.2	17 35.8	25 10 47.8	- 4 31.6	-0.1677	0.5757	0.1967	+33	-43
14 Tauri	6.2	1.24	1.3	19 26.3	14 44.5	- 0 44.0	-1.2427	0.5772	0.1890	-39	-71
43 Tauri	5.5	1.12	-0.5	19 25.2	26 01 04.1	+ 9 12.1	+0.6160	0.5811	0.1672	+86	+ 2
ω Tauri	4.8	-1.09	0.0	+20 24.2	04 19.6	-11 39.9	+0.1648	0.5822	+0.1599	+52	-21
51 Tauri	5.6	1.10	+0.3	21 24.3	04 45.8	-11 14.7	-0.7703	0.5824	0.1589	- 2	-69
53 Tauri	5.3	1.09	0.2	20 58.2	05 11.5	-10 50.0	-0.2657	0.5825	0.1579	+27	-43
56 Tauri	5.2	1.09	0.4	21 36.1	05 15.4	-10 46.3	-0.8890	0.5826	0.1577	- 9	-69
224 B. Tauri	6.1	1.07	0.2	20 39.2	06 22.8	- 9 41.5	+0.2380	0.5829	0.1551	+56	-17
227 B. Tauri	5.9	-1.07	+0.3	+20 48.9	06 50.6	- 9 14.8	+0.1460	0.5830	+0.1541	+50	-21
λ Tauri	4.1	1.07	0.8	22 07.8	07 33.5	- 8 33.6	-1.0643	0.5832	0.1524	-22	-68
67 Tauri	5.4	1.06	0.7	22 02.2	07 34.7	- 8 32.4	-0.9660	0.5833	0.1523	-15	-68
247 B. Tauri	5.8	1.05	0.6	21 27.6	08 37.6	- 7 31.9	-0.2301	0.5836	0.1499	+29	-40
129 II ¹ Tauri	5.8	0.99	0.6	20 32.5	12 44.4	- 3 34.8	+1.2903	0.5848	0.1400	+76	+59
τ Tauri	4.3	-0.99	+1.4	+22 49.2	14 17.8	- 2 05.0	-0.7877	0.5852	+0.1361	- 3	-68
300 B. Tauri	6.2	0.97	1.8	23 29.9	15 30.0	- 0 45.9	-1.2862	0.5856	0.1328	-51	-67
99 Tauri	6.0	0.91	2.2	23 50.3	20 28.0	+ 3 50.8	-1.0234	0.5867	0.1206	-20	-67
103 Tauri	5.5	0.85	2.5	24 10.3	27 00 32.2	+ 7 45.3	-0.8931	0.5875	0.1101	-10	-66
118 Tauri	5.4	0.74	3.3	25 05.7	08 52.0	- 8 14.6	-1.0068	0.5887	0.0879	-20	-65
121 Tauri	5.1	-0.69	+3.0	+23 59.6	11 18.6	- 5 53.8	+0.3176	0.5888	+0.0812	+62	- 6
132 Tauri	5.0	0.62	3.5	24 32.8	16 38.1	- 0 47.1	+0.1500	0.5890	0.0666	+51	-12
412 B. Tauri	5.8	0.57	3.5	24 14.5	19 45.2	+ 2 12.5	+0.6550	0.5889	0.0579	+90	+14
139 Tauri	4.7	0.57	4.1	25 56.9	20 08.8	+ 2 35.3	-1.0041	0.5889	0.0568	-25	-65
5 Geminorum	5.9	0.48	3.7	24 26.3	28 01 29.7	+ 7 43.4	+0.7425	0.5885	0.0419	+90	+21
8 Geminorum	6.1	-0.45	+3.6	+23 59.7	03 23.0	+ 9 32.3	+1.2713	0.5883	+0.0367	+72	+64
52 B. Geminorum	6.5	0.32	4.0	24 39.2	11 43.4	- 6 27.1	+0.8090	0.5868	0.0134	+90	+28
ϵ Geminorum	3.2	0.28	4.3	25 12.3	14 17.1	- 3 59.5	+0.2663	0.5861	+0.0062	+58	- 2
37 Geminorum	5.7	0.21	4.4	25 28.1	18 48.7	+ 0 21.5	-0.0052	0.5848	-0.0063	+42	-16
39 Geminorum	6.2	0.19	4.7	26 10.7	20 11.7	+ 1 41.2	-0.7503	0.5843	0.0101	- 2	-64
40 Geminorum	6.3	-0.19	+4.6	+26 00.9	20 27.7	+ 1 56.7	-0.5839	0.5842	-0.0108	+ 8	-51

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
ω Geminorum	5.2	-0.16	+4.0	+24 19.2	28 21 39.8	+3 06.0	+1.1528	0.5838	-0.0141	+90	+52
48 Geminorum	5.8	0.10	4.0	24 15.1	29 01 41.4	+6 58.2	+1.1478	0.5824	0.0250	+90	+51
52 Geminorum	6.1	0.09	4.2	25 00.8	02 35.2	+7 49.9	+0.3356	0.5820	0.0274	+63	0
4 Geminorum	5.1	-0.04	4.3	25 11.5	06 08.1	+11 14.6	+0.0362	0.5804	0.0369	+44	-16
176 B. Geminorum	6.3	+0.06	4.0	24 31.4	12 09.2	-6 58.1	+0.4621	0.5776	0.0526	+73	+5
181 B. Geminorum	6.0	+0.06	3.9	+24 25.3	12 32.9	-6 35.3	+0.5827	0.5774	-0.0537	+84	+11
c Geminorum	5.5	0.09	4.4	25 57.5	14 32.8	-4 39.9	+1.1666	0.5764	0.0588	-35	-65
n Geminorum	3.6	0.09	4.0	24 34.4	14 42.1	-4 31.0	+0.2685	0.5763	0.0592	+58	-6
9 Cancri	6.1	0.19	4.2	25 35.5	21 30.7	+2 02.2	-1.2594	0.5725	0.0762	-50	-65
5 B. Cancri	6.4	0.19	3.5	23 47.0	21 34.2	+2 05.6	+0.6297	0.5725	0.0764	+89	+11
4 Cancri	6.2	+0.20	4.0	+25 17.4	21 51.0	+2 21.8	-0.9691	0.5723	-0.0770	-17	-65
35 B. Cancri	6.4	0.26	3.2	23 21.4	30 03.6	+7 13.2	+0.6378	0.5693	0.0891	+90	+10
2 Cancri	5.9	0.30	3.4	24 15.1	05 46.6	+9 59.7	-0.5684	0.5675	0.0959	+10	-57
28 Cancri	6.1	0.34	3.4	24 23.2	09 13.1	-10 41.3	-1.0549	0.5653	0.1037	-23	-66
v ¹ Cancri	5.7	0.36	3.3	24 19.5	10 27.8	-9 29.3	-1.1232	0.5645	0.1065	-29	-66
v ² Cancri	6.4	+0.37	3.3	+24 19.9	11 06.2	-8 52.3	-1.1983	0.5640	-0.1079	-38	-66
7 Cancri	4.7	0.41	2.3	21 45.8	15 34.8	-4 33.2	+1.0405	0.5611	0.1177	+90	+33
5 Cancri	5.2	0.55	2.0	22 20.3	31 03.4	+6 32.0	-1.0926	0.5531	0.1410	-25	-68
79 Cancri	6.1	0.55	1.9	22 17.4	03 30.7	+6 57.6	-1.1044	0.5528	0.1418	-26	-68
90 H. Cancri	6.2	0.57	1.6	21 34.9	04 59.4	+8 23.2	-0.5641	0.5518	0.1446	+11	-62
57 B. Leonis	6.5	+0.69	+0.2	+19 11.7	19 09.9	-1 55.0	-0.2548	0.5418	-0.1693	+28	-45

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107 B. Leonis	6.3	+0.76	-1.1	+16 06.5	1 05 12.9	+7 48.4	+1.2724	0.5350	-0.1843	+87	+46
η Leonis	3.6	+0.77	-0.9	+17 06.9	05 59.7	+8 33.7	+0.0500	0.5345	-0.1854	+45	-31
42 Leonis	6.1	0.81	1.7	15 20.3	13 02.3	-8 37.2	+0.6191	0.5299	0.1947	+84	-2
46 Leonis	5.8	0.84	2.1	14 30.4	18 08.3	-3 40.7	+0.5071	0.5268	0.2008	+74	-10
h Leonis	5.5	0.88	2.5	14 34.5	2 01 14.4	+3 12.4	-1.0205	0.5226	0.2085	-16	-76
i Leonis	4.1	0.96	4.2	10 55.5	20 29.5	-2 06.9	-1.2533	0.5128	0.2248	-34	-80
ω Virginis	5.4	+0.98	-4.9	+8 31.9	3 04 09.4	+5 19.6	-0.3919	0.5096	-0.2295	+21	-62
ξ^1 Virginis	4.8	0.99	5.1	8 39.4	07 46.7	+8 50.7	-1.3645	0.5082	0.2314	-51	-76
r Virginis	4.2	0.98	5.3	6 55.9	08 05.4	+9 08.8	+0.4457	0.5081	0.2315	+68	-18
36 B. Virginis	6.5	1.00	5.8	5 57.5	17 41.2	-5 31.7	-0.7341	0.5050	0.2354	+3	-85
c Virginis	5.1	1.01	6.4	3 42.7	4 62 41.8	+3 13.7	-0.4072	0.5027	0.2378	+21	-65
250 B. Virginis	5.9	+1.02	-6.8	+2 14.9	12 32.4	-11 12.0	-1.1508	0.5008	-0.2389	-23	-88
65 Virginis	6.0	1.01	7.5	-4 33.0	5 13 15.5	-11 09.7	+0.4583	0.4995	0.2354	+68	-18
66 Virginis	5.7	1.02	7.5	4 47.4	13 56.0	-10 30.3	+0.5649	0.4995	0.2352	+76	-12
72 Virginis	6.1	1.01	7.4	6 06.1	17 09.9	-7 21.8	+1.2554	0.4997	0.2340	+84	+34
l Virginis	4.8	1.01	7.5	5 53.2	18 01.1	-6 31.9	+0.8188	0.4997	0.2337	+85	+2
80 Virginis	5.6	+1.01	-7.6	-5 01.9	19 58.5	-4 37.8	-0.5824	0.4999	-0.2329	+11	-79
88 Virginis	6.5	1.00	7.6	6 28.9	0 02 59.1	+2 11.2	-0.6014	0.5007	0.2296	+10	-81
598 B. Virginis	6.1	0.99	7.6	7 42.4	06 38.1	+5 44.1	-0.0781	0.5012	0.2276	+36	-46
623 B. Virginis	6.5	0.98	7.5	8 54.9	11 44.6	+10 42.0	+0.1038	0.5022	0.2245	+45	-36
95 Virginis	5.4	0.98	7.5	8 58.4	13 01.7	+11 57.0	-0.1197	0.5024	0.2237	+34	-48
96 Virginis	6.5	+0.98	-7.4	-9 59.8	14 15.8	-10 51.0	+0.7393	0.5027	-0.2228	+81	-3
k Virginis	4.4	0.98	7.4	9 56.5	16 22.4	-8 47.9	+0.2102	0.5031	0.2214	+51	-31
2 Libræ	6.3	0.96	7.3	11 23.3	22 03.3	-3 16.6	+0.5685	0.5045	0.2171	+72	-12
4 G. Libræ	6.5	0.96	7.3	11 20.7	22 44.1	-2 36.9	+0.3740	0.5046	0.2165	+59	-22
6 B. Libræ	6.2	0.93	7.1	12 00.1	7 05 22.5	+3 50.3	-0.3170	0.5065	0.2109	+22	-60
22 B. Libræ	6.4	+0.93	-7.2	-12 32.4	11 08.6	+9 26.5	-0.9214	0.5083	-0.2055	-13	-90

APRIL.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$		d h m	h m					
μ Librae	5.4	+0.93	-7.0	-13 51.1	7 11 52.7	+10 09.4	+0.3848	0.5086	-0.2047	+59	-21
ν Librae	5.3	0.90	6.5	15 58.8	20 58.0	-5 01.1	+0.9308	0.5118	0.1951	+75	+10
22 Librae	6.5	0.90	6.5	16 12.5	21 03.9	-4 55.3	+1.1646	0.5118	0.1950	+74	+28
σ Librae	6.2	0.87	6.6	15 17.5	8 04 27.3	+2 15.0	-1.2629	0.5148	0.1863	-43	-90
32 Librae	5.9	0.85	6.3	16 28.1	08 10.0	+5 51.1	-0.6385	0.5163	0.1816	0	-87
34 Librae	6.0	+0.85	-6.3	-16 21.9	09 24.4	+7 03.4	-0.9773	0.5168	-0.1800	-20	-90
ζ Librae	5.6	0.84	6.3	16 36.7	10 33.4	+8 10.2	-0.9094	0.5173	0.1785	-16	-90
41 Librae	5.3	0.83	5.7	19 04.0	13 34.5	+11 05.9	+1.2840	0.5186	0.1744	+71	+44
λ Librae	4.9	0.80	5.4	19 57.3	20 51.2	-5 50.6	+1.0366	0.5219	0.1641	+71	+19
47 Librae	5.8	0.79	5.6	19 10.4	21 42.2	-5 01.1	+0.0302	0.5223	0.1628	+33	-40
β^1 Scorpii	2.9	+0.76	-5.4	-19 36.7	9 02 53.9	+0 01.1	-0.3090	0.5247	-0.1549	+14	-61
β^2 Scorpii	5.0	0.76	5.4	19 36.4	02 54.1	+0 01.3	-0.3139	0.5247	0.1549	+14	-61
ω^1 Scorpii	4.3	0.76	5.2	20 28.6	03 34.0	+0 40.0	+0.5482	0.5250	0.1538	+62	-12
ω^2 Scorpii	4.6	0.76	5.1	20 40.6	03 51.5	+0 56.9	+0.7252	0.5251	0.1534	+70	-1
ν Scorpii	3.9	0.74	5.4	19 16.6	06 08.8	+3 10.0	-1.1748	0.5262	0.1497	-40	-90
84 B. Scorpii	6.3	+0.74	-5.0	-20 55.6	07 21.0	+4 19.9	+0.4763	0.5268	-0.1478	+57	-16
51 G. Scorpii	6.5	0.73	4.9	21 07.6	08 34.5	+5 31.2	+0.5181	0.5274	0.1458	+59	-13
58 G. Scorpii	6.2	0.72	5.2	20 02.7	09 38.6	+6 33.3	-0.8363	0.5279	0.1440	-16	-90
ϵ Ophiuchi	4.5	0.68	4.7	21 18.9	15 57.8	-11 19.5	-0.3053	0.5309	0.1333	+12	-61
24 Ophiuchi	5.5	0.60	4.0	23 02.3	10 03 45.1	+0 05.1	+0.1551	0.5365	0.1118	+34	-33
39 Ophiuchi	5.1	+0.52	-3.5	-24 12.7	13 41.9	+9 42.5	+0.4323	0.5410	-0.0922	+48	-18
θ Ophiuchi	3.3	0.50	3.2	24 55.8	15 32.6	+11 29.5	+1.0578	0.5418	0.0885	+66	+24
191 B. Ophiuchi	6.3	0.49	3.4	24 10.8	16 59.4	-11 06.7	+0.1057	0.5425	0.0855	+29	-36
44 Ophiuchi	4.1	0.48	3.5	24 06.7	17 34.6	-10 32.6	-0.0195	0.5427	0.0843	+22	-43
51 Ophiuchi	4.8	0.46	3.5	23 54.6	19 54.6	-8 17.2	-0.4331	0.5437	0.0794	0	-70
63 Ophiuchi	6.1	+0.36	-2.9	-24 52.5	11 06 37.9	+2 04.3	-0.0999	0.5481	-0.0563	+15	-48
7 Sagittarii	5.5	0.32	3.0	24 17.0	10 14.2	+5 33.3	-0.9359	0.5494	0.0483	-32	-90
9 Sagittarii	6.0	0.32	3.0	24 21.9	10 41.8	+5 59.9	-0.8695	0.5495	0.0473	-28	-90
67 B. Sagittarii	6.4	0.25	2.4	25 38.0	17 19.9	-11 35.7	+0.2561	0.5518	0.0322	+32	-27
70 B. Sagittarii	6.4	0.24	2.6	24 57.0	18 36.4	-10 21.8	-0.5304	0.5522	0.0293	-10	-79
λ Sagittarii	2.6	+0.21	-2.5	-25 27.8	21 28.6	-7 35.6	-0.0435	0.5530	-0.0226	+14	-44
86 B. Sagittarii	6.5	0.20	2.0	26 37.8	21 53.6	-7 11.5	+1.2189	0.5531	0.0216	+64	+44
126 B. Sagittarii	5.7	0.13	2.4	25 05.1	12 04 57.3	-0 22.5	-0.5583	0.5550	-0.0051	-14	-82
σ Sagittarii	2.1	0.08	1.9	26 23.3	09 32.3	+4 02.9	+0.8580	0.5561	+0.0058	+64	+9
162 B. Sagittarii	6.4	0.06	2.4	24 58.5	10 54.8	+5 22.5	-0.6648	0.5564	0.0091	-19	-90
127 G. Sagittarii	6.4	+0.05	-2.3	-25 02.7	11 49.3	+6 15.0	-0.5804	0.5566	+0.0113	-15	-84
172 B. Sagittarii	5.8	0.04	2.4	24 56.9	12 43.6	+7 07.4	-0.6731	0.5568	0.0134	-20	-90
189 B. Sagittarii	6.1	+0.01	2.4	24 46.3	15 15.9	-9 34.4	-0.8213	0.5572	0.0195	-28	-90
201 B. Sagittarii	5.9	-0.01	2.0	26 01.8	17 25.9	+11 39.8	+0.5871	0.5576	0.0247	+53	-8
ψ Sagittarii	4.8	0.02	2.2	25 23.0	18 27.1	-11 21.2	-0.0855	0.5577	0.0272	+13	-47
208 B. Sagittarii	6.1	-0.02	-2.6	-24 18.2	18 28.2	-11 20.2	-1.2507	0.5577	+0.0272	-61	-79
χ Sagittarii	4.9	0.07	2.4	24 39.0	22 43.1	-7 14.3	-0.7373	0.5583	0.0374	-21	-90
51 Sagittarii	5.8	0.13	2.3	24 52.7	13 03 24.5	-2 42.9	-0.2884	0.5588	0.0487	+4	-60
η Sagittarii	4.7	0.13	2.2	25 02.7	03 42.0	-2 26.0	-0.0955	0.5588	0.0494	+14	-48
308 B. Sagittarii	6.3	0.22	2.6	24 07.3	11 23.0	+4 58.6	-0.6329	0.5593	0.0678	-12	-90
36 B. Capricorni	6.2	-0.40	-3.0	-22 37.9	14 02 44.0	-4 13.2	-0.8941	0.5591	+0.1039	-24	-90
56 B. Capricorni	6.3	0.44	2.3	24 02.3	07 21.3	+0 14.3	+1.1002	0.5588	0.1144	+66	+26
17 Capricorni	5.8	0.48	3.2	21 46.7	10 00.3	+2 47.6	-0.9788	0.5586	0.1204	-28	-90
ζ Capricorni	5.3	0.58	3.4	21 29.1	19 48.5	-11 44.9	+0.0028	0.5576	0.1419	+28	-42
27 Capricorni	6.1	0.58	3.6	20 50.8	20 14.7	-11 19.7	-0.6037	0.5575	0.1428	-3	-85
ϕ Capricorni	5.3	-0.62	-3.5	-20 57.1	22 55.1	-8 44.9	-0.1038	0.5572	+0.1485	+24	-48

ELEMENTS OF OCCULTATIONS, 1928.

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APRIL.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
33 Capricorni	5.3	-0.66	-3.5	-21 09.6	15 02 40.0	-5 08.1	+0.6835	0.5566	+0.1563	+69	-4
35 Capricorni	6.0	0.67	3.4	21 30.6	04 01.5	-3 49.4	+1.2626	0.5565	0.1590	+69	+43
128 B. Capricorni	6.5	0.68	4.1	19 27.8	05 15.0	-2 38.4	-0.6758	0.5563	0.1615	-5	-90
37 Capricorni	5.7	0.70	3.7	20 24.4	07 23.4	-0 34.6	+0.6573	0.5560	0.1658	+69	-6
8 Capricorni	4.7	0.71	4.0	19 47.4	08 22.6	+0 22.6	+0.1797	0.5558	0.1677	+41	-32
κ Capricorni	4.8	-0.74	-4.1	-19 11.8	10 50.5	+2 45.3	-0.0186	0.5555	-0.1726	+30	-43
143 B. Capricorni	6.1	0.74	3.9	19 57.1	11 05.4	+2 59.6	+0.8087	0.5555	0.1730	+71	+4
154 B. Capricorni	6.1	0.77	4.2	18 57.6	14 50.7	+6 37.0	-0.4124	0.5549	0.1802	+57	-18
161 B. Capricorni	6.4	0.82	4.5	18 15.1	19 30.8	+11 07.4	+0.5089	0.5542	0.1888	+66	-11
29 Aquarii(mean)	6.5	0.82	4.7	17 18.8	19 38.0	+11 14.3	-0.3771	0.5542	0.1890	+14	-65
56 Aquarii	6.1	-0.93	-5.5	-14 57.3	16 08 04.2	-0 45.3	-0.3131	0.5524	+0.2101	+20	-60
69 Aquarii	5.6	1.00	5.6	14 26.3	15 53.3	+6 47.6	+0.8460	0.5516	0.2218	+76	+4
τ Aquarii	4.4	1.00	5.7	13 58.5	16 44.2	+7 36.7	+0.5623	0.5515	0.2230	+70	-12
74 Aquarii	5.8	1.02	6.2	12 00.1	18 29.4	+9 18.3	-1.0510	0.5514	0.2255	-21	-90
257 B. Aquarii	6.3	1.04	5.8	13 27.5	21 14.2	+11 57.5	+1.0532	0.5511	0.2292	+77	+18
290 B. Aquarii	6.3	-1.09	-6.3	-11 04.9	17 04 02.4	-5 28.3	-0.2326	0.5506	+0.2377	+51	-29
ψ^1 Aquarii	4.5	1.09	6.7	9 28.9	04 34.9	-4 56.9	-1.2542	0.5506	0.2383	-38	-90
ψ^2 Aquarii	4.6	1.10	6.7	9 34.7	05 30.1	-4 03.6	-0.9374	0.5506	0.2394	-12	-90
ψ^3 Aquarii	5.2	1.10	6.6	10 00.4	05 58.6	-3 36.1	-0.3973	0.5506	0.2399	+19	-65
336 B. Aquarii	6.3	1.14	6.6	9 39.8	10 31.0	+0 46.9	+0.3655	0.5505	0.2448	+60	-23
351 B. Aquarii	6.5	-1.16	-7.0	-7 51.9	13 27.8	+3 37.7	-0.7172	0.5505	+0.2478	+2	-90
376 B. Aquarii	6.3	1.19	7.1	6 46.9	19 20.2	+9 18.0	-0.3249	0.5500	0.2530	+24	-61
30 Piscium	4.7	1.23	7.0	6 25.0	18 01 23.2	-8 51.4	-0.8488	0.5510	0.2576	+84	+3
33 Piscium	4.8	1.24	7.0	6 06.7	02 54.6	-7 23.0	+0.9382	0.5512	0.2586	+84	+9
24 B. Ceti	6.0	1.25	7.1	-5 39.0	05 09.1	-5 13.3	+1.0576	0.5514	0.2599	+85	+17
NEW MOON.											
43 Tauri	5.5	-1.37	-1.2	+19 25.2	22 10 11.9	-3 52.1	+0.7580	0.5913	-0.1717	+90	+10
ω Tauri	4.8	1.36	0.7	20 24.2	13 20.9	-0 50.7	+0.3184	0.5926	0.1642	+61	-13
51 Tauri	5.6	1.37	0.5	21 24.3	13 46.2	-0 26.4	-0.6012	0.5928	0.1632	+8	-64
53 Tauri	5.3	-1.36	-0.5	+20 58.2	14 11.0	-0 02.6	-0.1043	0.5930	+0.1622	+36	-35
56 Tauri	5.2	1.37	0.4	21 36.0	14 14.7	+0 00.9	-0.7176	0.5930	0.1620	+2	-69
224 B. Tauri	6.1	1.35	0.5	20 39.1	15 19.8	+1 03.5	+0.3929	0.5934	0.1594	+66	-9
227 B. Tauri	5.9	1.35	0.4	20 48.9	15 46.7	+1 29.2	+0.3031	0.5936	0.1583	+60	-13
κ Tauri	4.1	1.36	0.1	22 07.8	16 28.1	+2 08.9	-0.8871	0.5938	0.1566	-9	-68
67 Tauri	5.4	-1.35	-0.1	+22 02.2	16 29.3	+2 10.1	-0.7913	0.5938	0.1565	-3	-68
247 B. Tauri	5.8	1.34	-0.1	21 27.6	17 30.0	+3 08.4	-0.0649	0.5942	0.1540	+38	-32
284 B. Tauri	6.0	1.33	+0.5	23 11.7	20 45.0	+6 15.5	-1.2939	0.5953	0.1457	-52	-68
τ Tauri	4.3	1.30	0.7	22 49.2	22 58.4	+8 23.5	-0.6065	0.5960	0.1400	+8	-62
300 B. Tauri	6.2	1.30	1.0	23 29.9	23 00 17.6	+9 39.4	-1.0954	0.5964	0.1365	-26	-67
99 Tauri	6.0	-1.26	+1.4	+23 50.3	04 55.4	-9 54.1	-0.8315	0.5976	+0.1240	-6	-67
103 Tauri	5.5	1.22	1.8	24 10.3	08 50.9	-6 08.2	-0.6993	0.5985	0.1132	+2	-66
118 Tauri	5.4	1.13	2.7	25 05.7	16 52.9	+1 34.0	-0.8036	0.5995	0.0904	-5	-65
121 Tauri	5.1	1.09	2.6	23 59.6	19 14.4	+3 49.7	+0.5013	0.5996	0.0836	+76	+4
125 Tauri	5.1	1.09	3.2	25 51.5	20 50.5	+5 21.7	-1.2353	0.5996	0.0789	-45	-65
132 Tauri	5.0	-1.03	+3.1	+24 32.7	24 00 22.7	+8 45.3	+0.3405	0.5996	+0.0685	+63	-3
412 B. Tauri	5.8	0.99	3.2	24 14.5	03 23.2	+11 38.4	+0.8397	0.5994	0.0597	+90	+25
139 Tauri	4.7	1.00	3.8	25 56.9	03 46.0	-11 59.8	-0.8519	0.5994	0.0585	-8	-65
5 Geminorum	5.9	0.92	3.6	24 26.3	08 56.0	-7 02.5	+0.9297	0.5986	0.0432	+90	+33
52 B. Geminorum	6.5	0.78	4.2	24 39.2	18 49.5	+2 26.7	+1.0012	0.5961	0.0140	+90	+40
8 Geminorum	3.2	-0.74	+4.5	+25 12.3	21 18.3	+4 49.4	+0.4677	0.5953	+0.0067	+73	+9

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ELEMENTS OF OCCULTATIONS, 1928.

APRIL.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
37 Geminorum	5.7	-0.68	+4.8	+25 28.1	25 01 41.6	+9 01.9	+0.2020	0.5935	-0.0061	+54	-5
39 Geminorum	6.2	0.66	5.1	26 10.7	03 02.1	+10 19.3	-0.5321	0.5929	0.0100	+11	-48
40 Geminorum	6.3	0.65	5.0	26 00.9	03 17.6	+10 34.1	-0.3679	0.5928	0.0108	+21	-36
52 Geminorum	6.1	0.55	4.8	25 00.8	09 14.4	-7 43.4	+0.5408	0.5899	0.0277	+80	+11
4 Geminorum	5.1	0.51	5.0	25 11.5	12 41.4	-4 24.6	+0.2463	0.5880	0.0373	+57	-5
176 B. Geminorum	6.3	-0.41	+4.9	+24 31.4	18 33.1	+1 13.2	+0.6681	0.5844	-0.0533	+90	+16
181 B. Geminorum	6.0	0.40	4.8	24 23.3	18 56.1	+1 35.4	+0.7873	0.5842	0.0544	+90	+23
c Geminorum	5.5	0.38	5.4	25 57.5	20 53.0	+3 27.7	-0.9407	0.5829	0.0595	-15	-65
κ Geminorum	3.6	0.37	4.9	24 34.4	21 02.1	+3 36.5	+0.4774	0.5828	0.0599	+74	+5
ω Cancri	6.1	0.27	5.3	25 35.6	26 03 41.1	+10 00.1	-1.0330	0.5782	0.0771	-22	-65
5 B. Cancri	6.4	-0.27	+4.7	+23 47.0	03 44.5	+10 03.4	+0.8352	0.5781	-0.0773	+90	+23
4 Cancri	6.2	0.27	5.2	25 17.4	04 01.0	+10 19.3	-0.7460	0.5779	0.0780	-1	-65
35 B. Cancri	6.4	0.19	4.5	23 21.4	08 57.1	-8 55.8	+0.8436	0.5743	0.0902	+90	+22
λ Cancri	5.9	0.15	4.8	24 15.1	11 46.6	-6 12.8	-0.3505	0.5721	0.0970	+22	-43
28 Cancri	6.1	0.10	4.8	24 23.2	15 09.3	-2 57.5	-0.8330	0.5695	0.1049	-7	-66
ν ¹ Cancri	5.7	-0.08	+4.8	+24 19.6	16 22.6	-1 47.0	-0.9010	0.5685	-0.1077	-11	-66
ν ² Cancri	6.4	0.07	4.8	24 19.9	17 00.3	-1 10.6	-0.9757	0.5680	0.1091	-16	-66
γ Cancri	4.7	-0.01	3.8	21 43.8	21 24.4	+3 03.8	+1.2421	0.5644	0.1189	+86	+52
ε Cancri	5.2	+0.15	3.8	22 20.3	27 08 44.2	-10 00.7	-0.8778	0.5551	0.1422	-9	-68
79 Cancri	6.1	0.16	3.8	22 17.4	09 10.4	-9 35.4	-0.8898	0.5547	0.1430	-9	-68
90 H ¹ Cancri	6.1	+0.18	+3.5	+21 34.9	10 38.1	-8 10.8	-0.3539	0.5535	-0.1458	+22	-49
57 B. Leonis	6.5	0.35	2.2	19 11.7	28 00 41.2	+5 23.7	-0.5449	0.5420	0.1703	+39	-34
η Leonis	3.6	0.46	1.1	17 06.9	11 28.0	-8 10.6	+0.2405	0.5336	0.1862	+56	-21
42 Leonis	6.1	0.53	+0.3	15 20.3	18 29.9	-1 22.2	+0.8021	0.5285	0.1953	+90	+8
46 Leonis	5.8	0.58	-0.2	14 30.4	23 35.8	+3 34.2	+0.6858	0.5250	0.2013	+90	0
κ Leonis	5.5	+0.65	-0.5	+14 34.5	29 06 42.5	+10 27.8	-0.8468	0.5203	-0.2089	-4	-76
ι Leonis	4.1	0.81	2.4	10 55.5	30 02 02.6	+5 13.4	-1.1052	0.5096	0.2249	-21	-80
ω Virginis	5.4	0.85	3.4	8 31.9	09 45.5	-11 17.0	-0.2545	0.5063	0.2296	+28	-54
ξ ¹ Virginis	4.8	0.88	3.5	8 39.4	13 24.4	-7 44.3	-1.2334	0.5048	0.2314	-31	-82
ι Virginis	4.2	0.87	4.0	6 55.9	13 43.2	-7 26.0	+0.5780	0.5047	0.2316	+79	-11
36 B. Virginis	6.5	+0.93	-4.5	+5 57.6	23 23.5	+1 57.9	-0.6180	0.5015	-0.2355	+9	-80

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c Virginis	5.1	+0.98	-5.4	+3 42.7	1 08 28.6	+10 48.0	-0.3054	0.4992	-0.2378	+26	-58
250 B. Virginis	5.9	+1.04	-6.0	+2 15.0	18 24.2	-3 32.8	-1.0670	0.4976	-0.2391	-17	-88
65 Virginis	6.0	1.14	7.6	-4 33.0	2 19 18.8	-3 19.0	+0.5021	0.4971	0.2360	+71	-16
66 Virginis	5.7	1.15	7.6	4 47.4	19 59.5	-2 39.4	+0.6077	0.4971	0.2358	+79	-10
72 Virginis	6.1	1.16	7.8	6 06.1	23 14.8	+0 30.5	+1.2938	0.4974	0.2347	+84	+38
l Virginis	4.8	1.16	7.8	5 53.2	3 00 06.3	+1 20.7	+0.8549	0.4975	0.2344	+85	+4
80 Virginis	5.6	+1.17	-7.7	-5 01.9	02 04.5	+3 15.6	-0.5523	0.4978	-0.2336	+12	-77
88 Virginis	6.5	1.19	7.9	6 28.9	09 07.5	+10 07.0	-0.5836	0.4989	0.2305	+11	-79
598 B. Virginis	6.1	1.20	8.0	7 42.5	12 47.6	-10 18.9	-0.0656	0.4996	0.2286	+38	-45
623 B. Virginis	6.5	1.22	8.1	8 54.9	17 55.5	-5 19.6	+0.1079	0.5008	0.2256	+45	-36
95 Virginis	5.4	1.22	8.1	8 58.4	19 13.0	-4 04.1	-0.1182	0.5011	0.2247	+34	-48
96 Virginis	6.5	+1.23	-8.2	-9 59.8	20 27.4	-2 51.8	+0.7401	0.5014	-0.2239	+81	-2
κ Virginis	4.4	1.24	8.1	9 56.5	22 34.4	-0 48.4	+0.2066	0.5019	0.2225	+51	-31
2 Libræ	6.3	1.25	8.2	11 23.3	4 04 16.6	+4 44.2	+0.5560	0.5036	0.2183	+71	-12
4 G. Libræ	6.5	1.25	8.2	11 20.7	04 57.5	+5 24.0	+0.3601	0.5038	0.2178	+59	-23
6 B. Libræ	6.2	1.25	8.0	12 00.1	11 36.9	+11 52.1	-0.3425	0.5060	0.2123	+21	-62
22 B. Libræ	6.4	+1.28	-8.1	-12 32.4	17 23.7	-6 30.9	-0.9567	0.5082	-0.2069	-15	-90

ELEMENTS OF OCCULTATIONS, 1928.

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MAY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
μ Libræ	5.4	+1.29	-8.1	-13 51.1	4 18 07.8	-5 48.1	+0.3500	0.5084	-0.2062	+57	-23
ν Libræ	5.3	1.31	7.9	15 58.9	5 03 15.6	+3 02.0	+0.8830	0.5120	0.1967	+75	+7
22 Libræ	6.5	1.31	7.9	16 12.5	03 19.5	+3 07.7	+1.1169	0.5121	0.1966	+74	+24
o Libræ	6.2	1.31	7.7	15 17.5	10 42.9	+10 18.2	-1.3236	0.5153	0.1879	-53	-79
32 Libræ	5.9	1.32	7.6	16 28.1	14 25.5	-10 05.8	-0.7037	0.5170	0.1832	-2	-90
34 Libræ	6.0	+1.32	-7.5	-16 21.9	15 39.9	-8 53.6	-1.0445	0.5176	-0.1816	-25	-90
ζ Libræ	5.6	1.32	7.5	16 36.7	16 48.8	-7 46.9	-0.9779	0.5181	0.1801	-20	-90
41 Libræ	5.3	1.34	7.3	19 04.1	19 49.7	-4 51.3	+1.2138	0.5195	0.1760	+71	+34
λ Libræ	4.9	1.33	6.9	19 57.3	6 03 05.9	+2 11.6	+0.9570	0.5230	0.1657	+71	+13
47 Libræ	5.8	1.33	6.9	19 10.4	03 56.8	+3 00.9	-0.0515	0.5234	0.1644	+29	-45
β^1 Scorpil	2.9	+1.33	-6.6	-19 36.7	09 08.0	+8 02.6	-0.3974	0.5259	-0.1565	+11	-67
β^2 Scorpil	5.0	1.33	6.6	19 36.5	09 08.3	-8 02.9	-0.4023	0.5259	0.1565	+10	-67
ω^1 Scorpil	4.3	1.33	6.5	20 28.6	09 48.0	+8 41.4	+0.4601	0.5262	0.1554	+56	-17
ω^2 Scorpil	4.6	1.33	6.5	20 40.7	10 05.5	+8 58.4	+0.6370	0.5264	0.1550	+67	-7
ν Scorpil	3.9	1.32	6.6	19 16.6	12 22.7	+11 11.3	-1.2679	0.5275	0.1513	-50	-85
84 B. Scorpil	6.3	+1.33	-6.3	-20 55.7	13 34.7	-11 39.0	+0.3840	0.5281	-0.1493	+51	-21
51 G. Scorpil	6.5	1.33	6.2	21 07.7	14 48.1	-10 27.9	+0.4246	0.5287	0.1473	+54	-18
58 G. Scorpil	6.2	1.32	6.3	20 02.7	15 52.1	-9 25.8	-0.9330	0.5292	0.1456	-22	-90
ω Ophiuchi	4.5	1.31	5.8	21 18.9	22 10.6	-3 19.3	-0.4079	0.5323	0.1347	+7	-68
24 Ophiuchi	5.5	1.29	5.0	23 02.3	7 09 57.0	+8 04.3	+0.0419	0.5378	0.1130	+28	-39
39 Ophiuchi	5.1	+1.26	-4.2	-24 12.7	19 53.3	-6 18.7	+0.3115	0.5421	-0.0933	+41	-24
0 Ophiuchi	3.3	1.26	3.9	24 55.8	21 44.0	-4 31.7	+0.9374	0.5429	0.0895	+66	+14
191 B. Ophiuchi	6.3	1.24	4.0	24 10.8	23 10.7	-3 07.9	-0.0185	0.5435	0.0865	+22	-43
44 Ophiuchi	4.1	1.24	4.0	24 06.7	23 46.0	-2 33.8	-0.1444	0.5437	0.0853	+15	-50
51 Ophiuchi	4.8	1.23	3.9	23 54.6	8 02 06.1	-0 18.3	-0.5611	0.5446	0.0804	-7	-81
63 Ophiuchi	6.1	+1.17	-3.0	-24 52.5	12 50.1	+10 04.0	-0.2343	0.5484	-0.0571	+8	-56
7 Sagittarii	5.5	1.14	2.9	24 17.0	16 26.9	-10 26.6	-1.0760	0.5496	0.0490	-42	-90
9 Sagittarii	6.0	1.14	2.8	24 21.9	16 54.6	-9 59.8	-1.0096	0.5497	0.0479	-37	-90
67 B. Sagittarii	6.4	1.10	2.1	25 38.0	23 34.1	-3 34.0	+0.1172	0.5515	0.0328	+24	-35
70 B. Sagittarii	6.4	1.09	2.2	24 57.0	9 00 51.0	-2 19.8	-0.6739	0.5519	0.0298	-18	-90
68 G. Sagittarii	6.2	+1.08	-1.6	-26 40.8	03 36.2	+0 19.7	+1.1498	0.5525	-0.0234	+64	+34
λ Sagittarii	2.9	1.07	2.0	25 27.8	03 43.9	+0 27.2	-0.1861	0.5525	0.0232	+7	-53
86 B. Sagittarii	6.5	1.08	1.6	26 37.8	04 09.0	+0 51.4	+1.0828	0.5526	0.0222	+64	+27
126 B. Sagittarii	5.7	1.00	1.5	25 05.1	11 15.3	+7 42.9	-0.7075	0.5540	-0.0056	-22	-90
σ Sagittarii	2.1	0.97	0.9	26 23.3	15 52.4	-11 49.6	+0.7158	0.5546	+0.0054	+63	0
162 B. Sagittarii	6.4	+0.95	-1.2	-24 58.5	17 15.5	-10 29.4	-0.8175	0.5548	+0.0087	-28	-90
127 G. Sagittarii	6.4	0.94	1.1	25 02.6	18 10.5	-9 36.3	-0.7329	0.5549	0.0108	-23	-90
172 B. Sagittarii	5.8	0.93	1.1	24 56.9	19 05.3	-8 43.5	-0.8266	0.5550	0.0130	-29	-90
189 B. Sagittarii	6.1	0.91	1.0	24 46.3	21 38.9	-6 15.2	-0.9770	0.5552	0.0191	-38	-90
201 B. Sagittarii	5.9	0.90	0.5	26 01.8	23 50.2	-4 08.5	+0.4408	0.5554	0.0243	+43	-17
ψ Sagittarii	4.8	+0.88	-0.6	-25 22.9	10 00 52.0	-3 08.8	-0.2370	0.5555	+0.0267	+5	-56
χ Sagittarii	4.9	0.84	0.6	24 39.0	05 10.8	+1 01.0	-0.8952	0.5556	0.0370	-30	-90
51 Sagittarii	5.8	0.79	0.2	24 52.7	09 55.7	+5 35.8	-0.4442	0.5556	0.0482	-4	-71
h Sagittarii	4.7	0.79	0.2	25 02.6	10 13.4	+5 53.0	-0.2497	0.5556	0.0489	+6	-57
308 B. Sagittarii	6.3	0.69	-0.2	24 07.3	18 00.9	-10 35.9	-0.7936	0.5554	0.0672	-21	-90
36 B. Capricorni	6.2	+0.51	+0.3	-22 37.9	11 09 38.1	+4 28.5	-1.0602	0.5536	+0.1029	-35	-90
56 B. Capricorni	6.3	0.48	1.1	24 02.3	14 21.1	+9 01.7	+0.9567	0.5528	0.1133	+66	+15
17 Capricorni	5.8	0.42	0.3	21 46.6	17 03.5	+11 38.4	-1.1463	0.5524	0.1192	-42	-90
ζ Capricorni	5.3	0.30	0.6	21 29.0	12 03 05.6	-2 40.2	-0.1519	0.5504	0.1403	+20	-51
27 Capricorni	6.1	0.30	0.4	20 50.8	03 32.4	-2 14.3	-0.7660	0.5504	0.1412	-13	-90
ϕ Capricorni	5.3	+0.26	+0.6	-20 57.1	06 16.8	+0 24.4	-0.2593	0.5498	+0.1468	+16	-57

MAY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	α'	γ'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
33 Capricorni	5.3	+0.21	+0.7	-21 09.5	12 10 07.6	+4 07.3	+0.5393	0.5490	+0.1544	+61	-12
35 Capricorni	6.0	0.20	0.9	21 30.5	11 31.3	+5 28.1	+1.1266	0.5486	0.1571	+69	+27
128 B. Capricorni	6.5	0.18	0.2	19 27.8	12 46.8	+6 41.0	-0.8375	0.5484	0.1596	-15	-90
37 Capricorni	5.7	0.15	0.7	20 24.4	14 58.6	+8 48.4	+0.5143	0.5479	0.1638	+60	-14
ϵ Capricorni	4.7	0.14	0.5	19 47.4	15 59.5	+9 47.1	+0.0306	0.5477	0.1657	+33	-40
κ Capricorni	4.8	+0.11	+0.3	-19 11.7	18 31.5	-11 46.0	-0.1696	0.5471	+0.1704	+23	-52
43 B. Capricorni	6.1	0.11	0.6	19 57.0	18 46.8	-11 31.2	+0.6693	0.5471	0.1709	+69	-5
154 B. Capricorni	6.1	+0.06	0.4	18 57.5	22 38.7	-7 47.2	+0.2994	0.5463	0.1779	+49	-25
161 B. Capricorni	6.4	0.00	+0.2	18 15.0	13 03 27.1	-3 08.5	+0.4298	0.5453	0.1863	+58	-19
29 Aquarii	6.5	0.00	-0.1	17 18.7	03 34.5	-3 01.4	-0.5296	0.5453	0.1865	+6	-76
(mean)											
56 Aquarii	6.1	-0.16	-0.5	-14 57.3	16 23.9	+9 22.2	-0.4579	0.5430	+0.2071	+12	-70
69 Aquarii	5.6	0.25	0.5	14 26.2	14 00 28.1	-6 49.8	+0.7237	0.5418	0.2187	+76	-3
τ Aquarii	4.4	0.26	0.7	13 58.4	01 20.6	-5 59.1	+0.4366	0.5417	0.2199	+62	-19
74 Aquarii	5.8	0.28	1.3	12 00.0	03 09.3	-4 14.0	-1.1992	0.5416	0.2223	-34	-90
257 B. Aquarii	6.3	0.31	0.7	13 27.4	05 59.5	-1 29.4	+0.9381	0.5412	0.2259	+77	+10
290 B. Aquarii	6.3	-0.39	-1.4	-11 04.8	13 00.9	+5 18.0	+0.1113	0.5408	+0.2343	+44	-36
η^2 Aquarii	4.6	0.41	1.8	9 34.6	14 31.4	+6 45.5	-1.0743	0.5408	0.2360	-20	-90
η^1 Aquarii	5.2	0.41	1.7	10 00.3	15 00.9	+7 14.1	-0.5189	0.5408	0.2366	+13	-74
336 B. Aquarii	6.3	0.46	1.7	9 39.8	19 42.2	+11 46.0	+0.2521	0.5407	0.2415	+54	-29
351 B. Aquarii	6.5	0.50	2.2	7 51.8	22 44.5	-9 17.7	-0.8429	0.5407	0.2444	-5	-90
376 B. Aquarii	6.3	-0.56	-2.4	-6 46.9	15 04 48.1	-3 26.0	-0.4438	0.5411	+0.2497	+18	-68
π Piscium	4.7	0.62	2.3	6 24.9	11 02.3	+2 35.7	+0.7572	0.5417	0.2544	+84	-2
π Piscium	4.8	0.64	2.3	6 06.7	12 36.5	+4 06.9	+0.8495	0.5420	0.2554	+84	+3
24 B. Ceti	6.0	0.66	2.4	5 38.9	14 54.9	+6 20.7	+0.9728	0.5423	0.2568	+85	+11
54 B. Ceti	6.3	0.72	3.1	2 37.1	21 28.4	-11 19.0	-0.3823	0.5436	0.2602	+22	-64
14 Ceti	5.4	-0.77	-3.5	-0 54.1	16 02 33.2	-6 24.4	-0.7752	0.5449	+0.2621	+1	-90
26 Ceti	6.0	0.88	3.5	+0 58.8	15 26.5	+6 02.7	+0.7429	0.5492	0.2641	+90	-3
35 Ceti	6.1	0.91	3.6	2 03.7	18 29.2	+8 59.2	+0.4710	0.5504	0.2640	+70	-18
f Piscium	5.3	0.94	3.8	3 14.1	21 44.2	-11 52.5	+0.1645	0.5518	0.2636	+51	-34
117 G. Piscium	6.5	0.97	3.6	3 09.7	17 01 47.9	-7 57.2	+1.3043	0.5536	0.2626	+90	+40
μ Piscium	5.0	-0.98	-4.0	+5 46.3	03 14.5	-6 33.6	-0.9007	0.5543	+0.2622	-7	-85
ν Piscium	4.6	1.02	-3.7	5 07.4	08 13.8	-1 44.7	+1.0442	0.5569	0.2602	+90	+17
NEW MOON.											
412 B. Tauri	5.8	-1.15	+2.8	+24 14.5	21 13 11.7	-0 45.1	+0.8981	0.6090	+0.0613	+90	+29
139 Tauri	4.7	-1.16	+3.2	+25 56.8	13 33.8	-0 24.0	-0.7714	0.6089	+0.0602	-3	-65
5 Geminorum	5.9	1.10	3.3	24 26.3	18 34.6	+4 24.1	+0.9900	0.6086	0.0446	+90	+37
52 B. Geminorum	6.5	1.01	4.0	24 39.2	22 04 09.6	-10 25.2	+1.0659	0.6065	0.0147	+90	+45
ϵ Geminorum	3.2	0.08	4.2	25 12.3	06 33.7	-8 07.2	+0.5414	0.6058	+0.0073	+80	+13
37 Geminorum	5.7	0.04	4.6	25 28.1	10 48.4	-4 03.2	+0.2818	0.6041	-0.0057	+59	-1
10 Geminorum	6.2	-0.93	+4.8	+26 10.7	12 06.4	-2 48.5	-0.4408	0.6035	-0.0097	+17	-41
43 Geminorum	6.3	0.92	4.8	26 00.9	12 21.3	-2 34.2	-0.2789	0.6034	0.0104	+26	-31
52 Geminorum	6.1	0.84	4.8	25 00.8	18 06.4	+2 56.6	+0.6192	0.6005	0.0278	+88	+15
134 B. Geminorum	6.5	0.85	5.3	20 49.3	18 58.7	+3 46.7	-1.2299	0.6000	0.0304	-46	-64
δ Geminorum	5.1	0.81	5.0	25 11.5	21 26.5	+6 08.4	+0.3307	0.5986	0.0376	+63	-1
176 B. Geminorum	6.3	-0.73	+5.1	+24 31.4	23 03 06.5	+11 34.5	+0.7486	0.5949	-0.0540	+90	+20
181 B. Geminorum	6.0	0.72	5.1	24 23.3	03 28.8	+11 56.0	+0.8661	0.5946	0.0550	+90	+28
ϵ Geminorum	5.5	0.71	5.6	25 57.5	05 21.8	-10 15.6	-0.8351	0.5933	0.0603	-7	-65
κ Geminorum	3.6	0.70	5.2	24 34.4	05 30.6	-10 07.2	+0.5617	0.5932	0.0607	+82	+9
ω Cancr	6.1	0.61	5.7	25 35.6	11 56.5	-3 56.7	-0.9235	0.5883	0.0783	-13	-65
5 B. Cancr	6.4	-0.60	+5.2	+23 47.0	11 59.8	-3 53.5	+0.9166	0.5883	-0.0784	+90	+28

ELEMENTS OF OCCULTATIONS, 1928.

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MAY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
4 Cancri	6.2	-0.61	+5.6	+25 17.4	23 12 15.7	-3 38.3	-0.6407	0.5881	-0.0792	+5	-61
35 B. Cancri	6.4	0.54	5.2	23 21.4	17 02.3	+0 57.1	+0.9266	0.5841	0.0916	+90	+28
2 Cancri	5.9	0.50	5.5	24 15.1	19 46.4	+3 34.8	-0.2489	0.5818	0.0985	+28	-37
28 Cancri	6.1	0.46	5.6	24 23.2	23 02.6	+6 43.5	-0.7234	0.5789	0.1065	0	-66
v ¹ Cancri	5.7	0.44	5.6	24 19.6	24 00 13.6	+7 51.8	-0.7902	0.5778	0.1094	-4	-66
v ² Cancri	6.4	-0.43	+5.6	+24 19.9	00 50.2	+8 27.0	-0.8637	0.5773	-0.1108	-8	-66
5 Cancri	5.2	0.21	5.0	22 20.3	16 06.0	-0 51.2	-0.7651	0.5630	0.1442	-1	-68
79 Cancri	6.1	0.21	5.0	22 17.5	16 31.5	-0 26.6	-0.7769	0.5626	0.1451	-2	-68
90 H ¹ Cancri	6.1	0.19	4.8	21 34.9	17 56.7	+0 55.5	-0.2482	0.5613	0.1479	+28	-42
57 B. Leonis	6.5	-0.01	3.8	19 11.8	25 07 37.9	-9 52.0	+0.0476	0.5484	0.1724	+45	-29
η Leonis	3.6	+0.12	+2.9	+17 06.9	18 10.0	+0 18.9	+0.3393	0.5389	-0.1883	+62	-16
42 Leonis	6.1	0.20	2.1	15 20.4	26 01 03.4	+6 58.9	+0.8945	0.5330	0.1972	+90	+14
46 Leonis	5.8	0.26	1.7	14 30.5	06 03.7	+11 49.6	+0.7789	0.5289	0.2032	+90	+5
h Leonis	5.5	0.34	+1.5	14 34.5	13 03.4	-5 23.8	-0.7410	0.5236	0.2106	+2	-76
l Leonis	4.1	0.54	-0.4	10 55.6	27 08 09.0	-10 52.7	-1.0053	0.5111	0.2260	-14	-80
ω Virginis	5.4	+0.61	-1.4	+8 31.9	15 47.9	-3 27.1	-0.1635	0.5070	-0.2304	+33	-49
5 ¹ Virginis	4.8	0.65	1.5	8 39.5	19 25.2	+0 04.0	-1.1389	0.5053	0.2322	-23	-82
7 Virginis	4.2	0.64	2.2	6 55.9	19 43.9	+0 22.1	+0.6626	0.5052	0.2323	+87	-6
π Virginis	4.6	0.72	2.3	7 00.9	28 03 47.6	+8 12.1	-1.3146	0.5019	0.2354	-40	-84
36 B. Virginis	6.5	0.73	2.7	5 57.6	05 21.2	+9 43.1	-0.5322	0.5013	0.2359	+14	-74
ϵ Virginis	5.1	+0.80	-3.6	+3 42.7	14 24.5	-5 28.7	-0.2261	0.4985	-0.2381	+30	-55
250 B. Virginis	5.9	0.89	4.3	+2 15.0	29 00 19.3	+4 09.8	-0.9913	0.4964	0.2391	-12	-88
65 Virginis	6.0	1.09	6.6	-4 33.0	30 01 15.9	+4 25.5	+0.5586	0.4952	0.2357	+76	-13
66 Virginis	5.7	1.10	6.7	4 47.4	01 56.7	+5 05.2	+0.6636	0.4953	0.2355	+83	-7
72 Virginis	6.1	1.12	7.0	6 06.1	05 12.5	+8 15.6	+1.3470	0.4956	0.2344	+81	+45
l Virginis	4.8	+1.12	-7.0	-5 53.2	06 04.2	+9 06.0	+0.9081	0.4956	-0.2341	+85	+7
80 Virginis	5.6	1.14	6.8	5 01.9	08 02.6	+11 01.1	-0.4990	0.4959	0.2334	+15	-72
88 Virginis	6.5	1.19	7.2	6 28.8	15 06.9	-6 06.2	-0.5349	0.4970	0.2303	+13	-75
598 B. Virginis	6.1	1.22	7.5	7 42.4	18 47.7	-2 31.4	-0.0198	0.4977	0.2283	+40	-43
623 B. Virginis	6.5	1.26	7.7	8 54.9	23 56.6	+2 28.9	+0.1503	0.4990	0.2254	+48	-34
95 Virginis	5.4	+1.27	-7.7	-8 58.4	31 01 14.3	+3 44.6	-0.0764	0.4993	-0.2246	+36	-46
96 Virginis	6.5	1.28	7.9	9 59.8	02 29.0	+4 57.2	+0.7806	0.4996	0.2238	+81	0
1 Virginis	4.4	1.30	7.8	9 56.5	04 36.4	+7 01.1	+0.2460	0.5002	0.2224	+53	-29
2 Libræ	6.3	1.34	8.1	11 23.3	10 19.6	-11 25.3	+0.5917	0.5020	0.2183	+74	-10
4 G. Libræ	6.5	1.34	8.1	11 20.7	11 00.6	-10 45.4	+0.3954	0.5023	0.2178	+61	-21
6 B. Libræ	6.2	+1.36	-8.0	-12 00.1	17 41.0	-4 16.3	-0.3111	0.5047	-0.2123	+22	-60
22 B. Libræ	6.4	+1.43	-8.1	-12 32.4	23 28.6	+1 21.4	-0.9285	0.5069	-0.2070	-13	-90

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μ Libræ	5.4	+1.43	-8.3	-13 51.1	1 00 12.8	+2 04.3	+0.3772	0.5073	-0.2063	+58	-22
v Libræ	5.3	1.50	8.3	15 58.9	09 19.4	+10 55.2	+0.9046	0.5112	0.1969	+75	+8
22 Libræ	6.5	1.50	8.3	16 12.5	09 25.4	+11 01.0	+1.1384	0.5113	0.1968	+74	+26
o Libræ	6.2	1.54	7.9	15 17.5	16 49.2	-5 48.1	-1.3052	0.5148	0.1883	-50	-83
32 Libræ	5.9	1.56	8.0	16 28.1	20 31.8	-2 12.1	-0.6876	0.5167	0.1836	-1	-90
34 Libræ	6.0	+1.57	-7.9	-16 21.9	21 46.2	-0 59.9	-1.0288	0.5173	-0.1820	-24	-90
c Libræ	5.6	1.58	7.9	16 36.7	22 55.0	+0 06.8	-0.9629	0.5179	0.1806	-19	-90
41 Libræ	5.3	1.61	8.0	19 04.1	2 01 56.0	+3 02.4	+1.2259	0.5195	0.1765	+71	+36
2 Libræ	4.9	1.65	7.7	19 57.3	09 11.8	+10 04.9	+0.9656	0.5233	0.1663	+71	+14
47 Libræ	5.8	1.65	7.6	19 10.4	10 02.6	+10 54.2	-0.0427	0.5238	0.1650	+29	-41
Scorpii	2.9	+1.67	-7.3	-19 36.7	15 13.3	-8 04.6	-0.3906	0.5265	-0.1571	+11	-66

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels,	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	α	γ'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
β^1 Scorpii	5.0	+1.67	-7.3	-19 36.5	2 15 13.5	-8 04.4	-0.3955	0.5265	-0.1571	+11	-66
ω^1 Scorpii	4.3	1.68	7.3	20 28.7	15 53.2	-7 25.9	+0.4659	0.5269	0.1561	+58	-16
ω^2 Scorpii	4.6	1.69	7.3	20 40.7	16 10.7	-7 08.9	+0.6425	0.5270	0.1556	+67	-6
ν Scorpii	3.9	1.68	7.1	19 16.6	18 27.5	-4 56.4	-1.2618	0.5282	0.1519	-49	-86
84 B. Scorpii	6.3	1.70	7.1	20 55.7	19 39.4	-3 46.8	+0.3880	0.5289	0.1500	+52	-20
51 G. Scorpii	6.5	+1.71	-7.0	-21 07.7	20 52.6	-2 35.9	+0.4281	0.5296	-0.1480	+54	-18
58 G. Scorpii	6.2	1.70	6.9	20 02.7	21 56.4	-1 34.0	-0.9287	0.5301	0.1462	-22	-90
ω Ophiuchi	4.5	1.73	6.5	21 18.9	3 04 13.8	+4 31.4	-0.4068	0.5335	0.1354	+7	-68
24 Ophiuchi	5.5	1.78	5.6	23 02.4	15 57.6	-8 07.5	+0.0382	0.5395	0.1137	+28	-40
39 Ophiuchi	5.1	1.80	4.8	24 12.7	4 01 51.2	+1 26.6	+0.3043	0.5442	0.0940	+41	-25
θ Ophiuchi	3.3	+1.82	-4.6	-24 55.8	03 41.4	+3 13.1	+0.9290	0.5450	-0.0901	+66	+13
191 B. Ophiuchi	6.3	1.81	4.5	24 10.8	05 07.7	+4 36.5	-0.0264	0.5456	0.0872	+22	-43
44 Ophiuchi	4.1	1.80	4.5	24 06.7	05 42.8	+5 10.4	-0.1525	0.5459	0.0859	+15	-51
51 Ophiuchi	4.8	1.80	4.2	23 54.6	08 02.2	+7 25.1	-0.5694	0.5468	0.0810	-8	-82
63 Ophiuchi	6.1	1.81	3.2	24 52.5	18 43.0	-6 15.7	-0.2457	0.5509	0.0576	+7	-57
7 Sagittarii	5.5	-1.79	-2.9	-24 17.0	22 18.6	-2 47.5	-1.0878	0.5520	-0.0494	-43	-90
9 Sagittarii	6.0	1.79	-2.8	24 21.9	22 46.2	-2 20.9	-1.0216	0.5522	0.0484	-38	-90
67 B. Sagittarii	6.4	1.79	2.0	25 38.0	5 05 23.7	+4 03.0	+0.1032	0.5540	0.0331	+23	-36
70 B. Sagittarii	6.4	1.78	2.0	24 57.0	06 40.2	+5 16.9	-0.6879	0.5544	0.0302	-19	-90
68 G. Sagittarii	6.2	1.80	1.5	26 40.8	09 24.6	+7 55.5	+1.1349	0.5550	0.0237	+64	+32
λ Sagittarii	2.9	+1.78	-1.7	-25 27.8	09 32.3	+8 03.0	-0.2008	0.5550	-0.0235	+6	-54
69 G. Sagittarii	6.3	1.80	1.4	26 48.1	09 34.6	+8 05.2	+1.2656	0.5550	0.0233	+64	+56
86 B. Sagittarii	6.5	1.80	1.4	26 37.8	09 57.3	+8 27.1	+1.0678	0.5551	0.0225	+64	+26
126 R. Sagittarii	5.7	1.75	0.9	25 05.1	17 01.6	-8 43.3	-0.7236	0.5563	-0.0057	-23	-90
σ Sagittarii	2.1	1.74	0.2	26 23.3	21 37.6	-4 16.9	+0.6996	0.5569	+0.0053	+62	-1
162 B. Sagittarii	6.4	+1.72	-0.3	-24 58.5	23 00.4	-2 57.0	-0.8348	0.5571	+0.0086	-29	-90
127 G. Sagittarii	6.4	1.72	0.2	25 02.6	23 55.2	-2 04.2	-0.7502	0.5571	0.0108	-24	-90
172 B. Sagittarii	5.8	1.71	-0.2	24 56.8	6 00 49.8	-1 11.6	-0.8442	0.5572	0.0129	-30	-90
189 B. Sagittarii	6.1	1.69	+0.1	24 46.3	03 23.0	+1 16.3	-0.9952	0.5574	0.0191	-39	-90
201 B. Sagittarii	5.9	1.70	0.6	26 01.7	05 33.8	+3 22.6	+0.4237	0.5574	0.0243	+41	-18
ν Sagittarii	4.8	+1.68	+0.5	-25 22.9	06 35.5	+4 22.0	-0.2549	0.5575	+0.0268	+4	-58
χ Sagittarii	4.9	1.64	0.8	24 39.0	10 53.7	+8 31.2	-0.9146	0.5575	0.0370	-32	-90
51 Sagittarii	5.8	1.62	1.4	24 52.6	15 36.2	-10 54.3	-0.4635	0.5572	0.0483	-5	-73
h Sagittarii	4.7	1.62	1.4	25 02.6	15 55.9	-10 37.3	-0.2687	0.5572	0.0490	+5	-58
308 B. Sagittarii	6.3	1.54	1.8	24 07.3	23 43.2	-3 06.4	-0.8147	0.5565	0.0673	-23	-90
36 B. Capricorni	6.2	+1.34	+3.1	-22 37.8	7 15 22.5	-11 59.7	-1.0840	0.5536	+0.1029	-37	-90
56 B. Capricorni	6.3	1.38	4.1	24 02.2	20 06.8	-7 25.2	+0.9420	0.5524	0.1133	+66	+14
17 Capricorni	5.8	1.31	3.5	21 46.5	22 50.1	-4 47.5	-1.1713	0.5518	0.1191	-44	-90
χ Capricorni	5.3	1.21	4.2	21 29.0	8 08 56.7	+4 58.2	-0.1718	0.5488	0.1400	+19	-52
27 Capricorni	6.1	1.20	4.0	20 50.7	09 23.8	+5 24.3	-0.7898	0.5487	0.1409	-14	-90
ϕ Capricorni	5.3	+1.17	+4.3	-20 57.0	12 09.8	+8 04.7	-0.2797	0.5479	+0.1464	+15	-59
33 Capricorni	5.3	1.13	4.6	21 09.4	16 03.1	+11 50.1	+0.5248	0.5467	0.1538	+60	-13
35 Capricorni	6.0	1.11	4.9	21 30.5	17 27.7	-10 48.1	+1.1166	0.5462	0.1565	+69	+26
128 B. Capricorni	6.5	1.08	4.4	19 27.7	18 44.1	-9 34.3	-0.8621	0.5458	0.1589	-16	-90
37 Capricorni	5.7	1.06	4.8	20 24.3	20 57.6	-7 25.3	+0.5002	0.5451	0.1630	+60	-14
ϵ Capricorni	4.7	+1.05	+4.7	-19 47.3	21 59.2	-6 25.8	+0.0129	0.5448	+0.1649	+32	-41
κ Capricorni	4.8	1.02	4.7	19 11.6	9 00 33.4	-3 56.7	-0.1888	0.5440	0.1695	+22	-53
143 B. Capricorni	6.1	1.02	4.9	19 57.0	00 48.9	-3 41.7	+0.6572	0.5439	0.1700	+69	-6
154 B. Capricorni	6.1	0.97	4.8	18 57.5	04 44.2	+0 05.8	+0.2848	0.5427	0.1768	+48	-26
161 B. Capricorni	6.4	0.91	4.9	18 14.9	09 37.2	+4 49.0	+0.4172	0.5412	0.1850	+57	-19
29 Aquarii (mean)	6.5	+0.90	+4.6	-17 18.6	09 44.7	+4 56.3	-0.5514	0.5412	+0.1852	+5	-78

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	α'	γ'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
56 Aquarii	6.1	+0.73	+4.6	-14 57.2	9 22 48.9	-6 25.3	-0.4781	0.5376	+0.2052	+11	-72
69 Aquarii	5.6	0.63	4.8	14 26.1	10 07 03.9	+1 33.6	+0.7184	0.5356	0.2164	+76	-3
τ Aquarii	4.4	0.62	4.7	13 58.3	07.57.7	+2 25.6	+0.4280	0.5355	0.2175	+61	-19
74 Aquarii	5.8	0.59	4.1	11 59.9	09 49.0	+4 13.3	-1.2276	0.5351	0.2198	-36	-90
257 B. Aquarii	6.3	0.56	4.7	13 27.3	12 43.4	+7 02.1	+0.9369	0.5346	0.2233	+77	+10
290 B. Aquarii	6.3	+0.47	+4.2	-11 04.7	19 56.0	-9 59.2	+0.1008	0.5335	+0.2313	+44	-36
η^2 Aquarii	4.6	0.44	3.7	9 34.5	21 29.0	-8 29.3	-1.1007	0.5333	0.2329	-22	-90
η^3 Aquarii	5.2	0.44	3.9	10 00.2	21 59.2	-8 00.0	-0.5376	0.5332	0.2334	+12	-76
336 B. Aquarii	6.3	0.38	3.9	9 39.7	11 02 48.5	-3 20.0	+0.2448	0.5328	0.2381	+53	-29
351 B. Aquarii	6.5	0.34	3.4	7 51.7	05 56.2	-0 18.2	-0.8653	0.5326	0.2409	-7	-90
376 B. Aquarii	6.3	+0.27	+3.2	-6 46.8	12 10.8	+5 44.3	-0.4596	0.5326	+0.2459	+17	-69
30 Piscium	4.7	0.20	3.3	6 24.8	18 36.8	+11 57.9	+0.7606	0.5328	0.2504	+84	-2
33 Piscium	4.8	0.18	3.3	6 06.6	20 14.0	-10 28.1	+0.8546	0.5330	0.2513	+84	+4
24 B. Ceti	6.0	0.15	3.2	5 38.8	22 37.0	-8 09.6	+0.9803	0.5332	0.2527	+85	+12
54 B. Ceti	6.3	0.06	2.3	2 37.0	12 05 23.4	-1 36.2	-0.3946	0.5342	0.2558	+22	-65
14 Ceti	5.4	+0.01	+1.9	-0 54.0	10 38.4	+3 28.5	-0.7927	0.5353	+0.2577	0	-90
26 Ceti	6.0	-0.14	1.6	+0 58.9	23 58.1	-7 37.8	+0.7510	0.5394	0.2596	+90	-3
33 Ceti	6.1	0.18	1.4	2 03.8	18 03 06.9	-4 35.2	+0.4754	0.5406	0.2594	+70	-18
f Piscium	5.3	0.22	1.1	3 14.2	06 28.6	-1 20.2	+0.1645	0.5420	0.2590	+51	-34
117 G. Piscium	6.5	0.26	1.2	3 09.8	10 40.4	+2 43.2	+1.3220	0.5440	0.2581	+87	+42
μ Piscium	5.0	-0.27	+0.5	+5 46.4	12 09.8	+4 09.6	-0.9161	0.5447	+0.2577	-8	-85
ν Piscium	4.6	0.33	0.9	5 07.4	17 18.9	+9 08.2	+1.0583	0.5473	0.2558	+90	+18
64 Ceti	5.8	0.47	0.4	8 14.0	14 06 42.7	-1 55.5	+1.3231	0.5555	0.2476	+86	+45
ξ^1 Ceti	4.6	0.48	0.4	8 30.6	07 26.0	-1 13.8	+1.2263	0.5559	0.2470	+90	+33
ξ Arietis	5.5	0.53	+0.1	10 17.1	12 35.9	+3 45.3	+0.7219	0.5595	0.2424	+90	0
31 Arietis	5.7	-0.57	-0.2	+12 08.2	17 41.2	+8 39.6	+0.1035	0.5631	+0.2371	+48	-33
38 Arietis	5.2	0.60	0.1	12 08.6	21 15.4	-11 53.9	+0.9344	0.5657	0.2329	+90	+14
σ Arietis	5.4	0.64	0.5	14 47.2	15 00 00.6	-9 14.8	-1.0464	0.5679	0.2294	-18	-76
145 B. Arietis	6.5	0.69	0.5	15 34.6	05 32.4	-3 55.3	-0.5800	0.5722	0.2217	+11	-69
26 B. Tauri	6.4	0.78	-0.3	17 35.9	17 36.0	+7 41.0	-0.0173	0.5817	+0.2016	+41	-34
NEW MOON.											
ω Cancri	6.1	-0.71	+5.4	+25 35.6	19 21 51.4	+7 46.3	-0.9336	0.5962	-0.0796	-14	-65
5 B. Cancri	6.4	0.70	5.0	23 47.0	21 54.7	+7 49.5	+0.8887	0.5961	0.0798	+90	+26
4 Cancri	6.2	0.71	5.3	25 17.4	22 10.2	+8 04.3	-0.6536	0.5959	0.0805	+5	-62
35 B. Cancri	6.4	-0.66	+5.1	+23 21.4	20 02 50.1	-11 27.0	+0.8966	0.5922	-0.0931	+90	+26
γ Cancri	5.9	0.64	5.4	24 15.1	05 30.3	-8 53.2	-0.2677	0.5900	0.1002	+27	-39
28 Cancri	6.1	0.60	5.5	24 23.2	08 41.7	-5 49.4	-0.7381	0.5873	0.1084	0	-66
ν^1 Cancri	5.7	0.59	5.5	24 19.6	09 50.9	-4 42.9	-0.8044	0.5863	0.1113	-4	-66
ν^2 Cancri	6.4	0.58	5.5	24 19.9	10 26.6	-4 08.6	-0.8772	0.5851	0.1127	-9	-66
γ Cancri	4.7	-0.54	+5.1	+21 43.8	14 36.0	-0 08.9	+1.2839	0.5819	-0.1228	+77	+59
ξ Cancri	5.2	0.42	5.4	22 20.4	21 01 18.6	+10 09.4	-0.7841	0.5717	0.1468	-3	-68
79 Cancri	6.1	0.42	5.4	22 17.5	01 43.5	+10 33.4	-0.7959	0.5713	0.1476	-3	-68
90 H ¹ Cancri	6.1	0.40	5.2	21 34.9	03 06.4	+11 53.2	-0.2739	0.5700	0.1505	+27	-44
57 B. Leonis	6.5	0.25	4.6	19 11.8	16 25.5	+0 43.5	+0.0139	0.5568	0.1753	+43	-31
η Leonis	3.6	-0.14	+3.9	+17 06.9	22 02 40.6	+10 37.4	+0.2986	0.5468	-0.1913	+60	-18
42 Leonis	6.1	0.06	3.3	15 20.4	09 23.2	-6 53.6	+0.8449	0.5406	0.2003	+90	+11
46 Leonis	5.8	-0.01	3.0	14 30.5	14 15.8	-2 10.6	+0.7293	0.5362	0.2062	+90	+3
h Leonis	5.5	+0.06	2.9	14 34.6	21 05.1	+4 25.7	-0.7747	0.5304	0.2136	0	-76
t Leonis	4.1	0.27	1.3	10 55.6	23 15 44.8	-1 29.2	-1.0422	0.5165	0.2286	-16	-80
ω Virginis	5.4	+0.34	+0.4	+8 32.0	23 14.5	+5 47.1	-0.2110	0.5119	-0.2328	+31	-51

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
ξ^1 Virginis	4.8	+0.38	+0.3	+ 8 39.5	24 02 47.8	+ 9 14.3	-1.1776	0.5099	-0.2344	-26	-82
ν Virginis	4.2	0.37	-0.4	6 56.0	03 06.2	+ 9 32.1	+0.6065	0.5097	0.2345	+81	-9
π Virginis	4.6	0.46	0.4	7 00.9	11 01.5	- 6 46.3	-1.3541	0.5057	0.2374	-46	-80
36 B. Virginis	6.5	0.47	0.8	5 57.6	12 33.5	- 5 16.9	-0.5789	0.5050	0.2378	+12	-77
c Virginis	5.1	0.55	1.8	3 42.8	21 28.8	+ 3 23.2	-0.2767	0.5015	0.2396	+27	-58
250 B. Virginis	5.9	+0.65	-2.5	+ 2 15.0	25 07 16.1	-11 05.9	-1.0375	0.4986	-0.2402	-15	-88
65 Virginis	6.0	0.90	5.2	- 4 33.0	28 07 59.6	-11 03.2	+0.5034	0.4958	0.2359	+71	-16
66 Virginis	5.7	0.91	5.3	4 47.4	08 40.2	-10 23.7	+0.6079	0.4958	0.2357	+79	-10
72 Virginis	6.1	0.94	5.7	6 06.0	11 54.8	- 7 14.4	+1.2887	0.4959	0.2345	+84	+37
l Virginis	4.8	0.94	5.7	5 53.2	12 46.2	- 6 24.4	+0.8519	0.4960	0.2342	+85	+4
80 Virginis	5.6	+0.96	-5.4	- 5 01.9	14 44.1	- 4 29.8	-0.5486	0.4961	-0.2334	+12	-76
88 Virginis	6.5	1.03	5.9	6 28.8	21 46.6	+ 2 21.2	-0.5835	0.4969	0.2300	+11	-79
598 B. Virginis	6.1	1.06	6.4	7 42.4	27 01 26.6	+ 5 55.0	-0.0696	0.4974	0.2280	+37	-46
623 B. Virginis	6.5	1.12	6.7	8 54.8	06 34.7	+10 54.6	+0.1011	0.4984	0.2250	+45	-36
95 Virginis	5.4	1.13	6.7	8 58.3	07 52.2	-11 50.0	-0.1246	0.4988	0.2241	+33	-49
96 Virginis	6.5	+1.15	-7.0	- 9 59.8	09 06.6	-10 37.6	+0.7300	0.4991	-0.2233	+81	-3
κ Virginis	4.4	1.17	6.9	9 56.5	11 13.8	- 8 34.1	+0.1976	0.4996	0.2218	+51	-31
2 Libræ	6.3	1.23	7.4	11 23.3	16 56.5	- 3 00.9	+0.5440	0.5012	0.2177	+70	-13
4 G. Libræ	6.5	1.23	7.3	11 20.7	17 37.4	- 2 21.1	+0.3486	0.5014	0.2171	+58	-23
6 B. Libræ	6.2	1.28	7.2	12 00.1	28 00 17.4	+ 4 07.6	-0.3539	0.5037	0.2116	+20	-63
22 B. Libræ	6.4	+1.36	-7.5	-12 32.4	06 04.9	+ 9 45.3	-0.9680	0.5059	-0.2063	-16	-90
μ Libræ	5.4	1.37	7.8	13 51.1	06 49.1	+10 28.2	+0.3351	0.5062	0.2056	+56	-24
ν Libræ	5.3	1.47	8.1	15 58.9	15 55.6	- 4 41.0	+0.8653	0.5102	0.1961	+75	+6
22 Libræ	6.5	1.47	8.2	16 12.5	16 01.6	- 4 35.2	+1.0986	0.5102	0.1960	+74	+22
o Libræ	6.2	1.54	7.6	15 17.5	23 25.4	+ 2 35.6	-1.3370	0.5138	0.1874	-56	-76
32 Libræ	5.9	+1.58	-7.8	-16 28.1	29 03 08.0	+ 6 11.6	-0.7188	0.5157	-0.1828	-3	-90
34 Libræ	6.0	1.59	7.7	16 21.9	04 22.4	+ 7 23.8	-1.0589	0.5163	0.1813	-26	-90
ι Libræ	5.6	1.60	7.8	16 36.7	05 31.2	- 8 30.5	-0.9925	0.5169	0.1798	-21	-90
41 Libræ	5.3	1.65	8.2	19 04.1	08 32.1	+11 26.0	+1.1939	0.5185	0.1757	+71	+32
λ Libræ	4.9	1.72	8.0	19 57.3	15 47.8	- 5 31.5	+0.9377	0.5225	0.1655	+71	+12
47 Libræ	5.8	+1.72	-7.8	-19 10.4	16 38.6	- 4 42.3	-0.0682	0.5230	-0.1643	+28	-46
β^1 Scorpii	2.9	1.77	7.5	19 36.7	21 49.1	+ 0 18.7	-0.4126	0.5259	0.1564	+10	-68
β^2 Scorpii	5.0	1.77	7.5	19 36.5	21 49.3	+ 0 18.9	-0.4176	0.5259	0.1564	+10	-68
ω^1 Scorpii	4.3	1.78	7.7	20 28.7	22 29.0	+ 0 57.4	+0.4426	0.5263	0.1554	+55	-17
ω^2 Scorpii	4.6	1.79	7.7	20 40.7	22 46.4	+ 1 14.2	+0.6191	0.5265	0.1549	+66	-8
ν Scorpii	3.9	+1.79	-7.3	-19 16.6	30 01 03.1	+ 3 26.7	-1.2804	0.5278	-0.1513	-52	-82
84 B. Scorpii	6.3	1.82	7.5	20 55.7	02 14.9	+ 4 36.2	+0.3670	0.5285	0.1493	+50	-22
51 G. Scorpii	6.5	1.83	7.4	21 07.7	03 28.0	+ 5 47.0	+0.4078	0.5292	0.1473	+53	-19
58 G. Scorpii	6.2	1.83	7.2	20 02.7	04 31.8	+ 6 48.8	-0.9458	0.5298	0.1456	-23	-90
ω Ophiuchi	4.5	1.90	6.9	21 18.9	10 48.5	-11 06.4	-0.4211	0.5334	0.1348	+6	-69
24 Ophiuchi	5.5	+2.00	-6.2	-23 02.4	22 30.5	+ 0 12.9	+0.0302	0.5399	-0.1132	+28	-40

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39 Ophiuchi	5.1	+2.08	-5.4	-24 12.7	1 08 23.0	+ 9 44.9	+0.3021	0.5451	-0.0935	+41	-25
θ Ophiuchi	3.3	+2.11	-5.3	-24 55.8	10 11.7	+11 31.0	+0.9264	0.5460	-0.0896	+66	+13
191 B. Ophiuchi	6.3	2.10	5.0	24 10.8	11 37.6	-11 06.0	-0.0256	0.5468	0.0866	+22	-43
44 Ophiuchi	4.1	2.10	5.1	24 06.7	12 12.6	-10 32.2	-0.1509	0.5470	0.0854	+15	-51
51 Ophiuchi	4.8	2.11	4.7	23 54.6	14 31.2	- 8 18.3	-0.5651	0.5481	0.0805	-8	-82
63 Ophiuchi	6.1	2.18	3.6	24 52.5	2 01 08.4	+ 1 57.2	-0.2348	0.5527	0.0571	+8	-56
7 Sagittarii	5.5	+2.18	-3.2	-24 17.0	04 42.7	+ 5 24.1	-1.0718	0.5541	-0.0489	-42	-90

ELEMENTS OF OCCULTATIONS, 1928.

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
9 Sagittarii	6.0	+2.19	-3.1	-24 21.9	d h m 2 05 10.1	+ 5 50.5	-1.0054	0.5542	-0.0478	-37	-90
67 B. Sagittarii	6.4	2.23	2.4	25 38.0	11 44.8	-11 48.5	+0.1207	0.5564	0.0325	+24	-35
70 B. Sagittarii	6.4	2.22	2.2	24 57.0	13 00.7	-10 35.2	-0.6669	0.5568	0.0296	-18	-90
68 G. Sagittarii	6.2	2.26	1.9	26 40.8	15 43.9	-7 57.7	+1.1520	0.5575	0.0231	+64	+35
λ Sagittarii	2.9	2.24	1.9	25 27.8	15 51.5	-7 50.4	-0.1792	0.5576	0.0228	+7	-53
86 B. Sagittarii	6.5	+2.26	-1.8	-26 37.8	16 16.3	-7 26.4	+1.0855	0.5577	-0.0218	+64	+27
126 B. Sagittarii	5.7	2.24	0.9	25 05.1	23 17.3	-0 40.2	-0.6947	0.5592	-0.0050	-21	-90
σ Sagittarii	2.1	2.28	0.3	26 23.3	8 03 50.9	+ 3 43.8	+0.7271	0.5600	+0.0061	+64	0
162 B. Sagittarii	6.4	2.25	-0.1	24 58.5	05 13.0	+ 5 03.0	-0.8009	0.5602	0.0094	-27	-90
127 G. Sagittarii	6.4	2.25	0.0	25 02.6	06 07.3	+ 5 55.4	-0.7159	0.5603	0.0116	-22	-90
172 B. Sagittarii	5.8	+2.25	0.0	-24 56.8	07 01.4	+ 6 47.6	-0.8089	0.5604	+0.0138	-28	-90
189 B. Sagittarii	6.1	2.24	+0.4	24 46.3	09 33.2	+ 9 13.9	-0.9574	0.5606	0.0199	-36	-90
201 B. Sagittarii	5.9	2.27	0.8	26 01.7	11 42.8	+11 19.0	+0.4583	0.5608	0.0252	+44	-16
ψ Sagittarii	4.8	2.26	0.8	25 22.6	12 43.9	-11 42.1	-0.2172	0.5609	0.0277	+6	-55
χ Sagittarii	4.9	2.24	1.4	24 39.0	16 59.7	-7 35.3	-0.8712	0.5609	0.0380	-29	-90
51 Sagittarii	5.8	+2.23	+2.1	-24 52.6	21 41.5	-3 03.5	-0.4180	0.5609	+0.0494	-2	-69
h Sagittarii	4.7	2.24	2.1	25 02.6	21 59.0	-2 46.7	-0.2236	0.5608	0.0501	+8	-55
308 B. Sagittarii	6.3	2.19	2.8	24 07.3	4 05 41.8	+ 4 39.7	-0.7616	0.5602	0.0686	-19	-90
36 B. Capricorni	6.2	2.11	4.9	22 37.8	21 12.3	-4 22.5	-1.0181	0.5573	0.1044	-32	-90
56 K. Capricorni	6.3	2.12	5.9	24 02.2	5 01 54.1	+ 0 09.4	+1.0061	0.5561	0.1148	+66	+19
17 Capricorni	5.8	+2.05	+5.6	-21 46.5	04 36.0	+ 2 45.8	-1.0995	0.5553	+0.1207	-37	-90
λ Capricorni	5.3	1.98	6.7	21 28.9	14 37.8	-11 33.3	-0.0945	0.5521	0.1416	+23	-47
27 Capricorni	6.1	1.97	6.6	20 50.7	15 04.7	-11 07.3	-0.7111	0.5520	0.1425	-9	-90
ϕ Capricorni	5.3	1.95	7.0	20 57.0	17 49.5	-8 28.2	-0.1998	0.5510	0.1480	+19	-54
33 Capricorni	5.3	1.92	7.4	21 09.4	21 41.3	-4 44.2	+0.6067	0.5496	0.1554	+65	-8
35 Capricorni	6.0	+1.91	+7.7	-21 30.4	23 05.4	-3 23.0	+1.1989	0.5491	+0.1581	+69	+35
128 B. Capricorni	6.5	1.88	7.4	19 27.6	6 00 21.4	-2 09.6	-0.7765	0.5487	0.1605	-11	-90
37 Capricorni	5.7	1.87	7.8	20 24.2	02 34.1	-0 01.4	+0.5862	0.5478	0.1646	+65	-10
ϵ Capricorni	4.7	1.86	7.8	19 47.2	03 35.4	+0 57.8	+0.1000	0.5475	0.1664	+37	-36
κ Capricorni	4.8	1.83	7.9	19 11.6	06 08.8	+3 26.0	-0.0996	0.5465	0.1710	+26	-48
143 B. Capricorni	6.1	+1.84	+8.1	-19 56.9	06 24.3	+ 3 41.1	+0.7462	0.5464	+0.1715	+71	0
154 B. Capricorni	6.1	1.79	8.2	18 57.4	10 18.6	+ 7 27.5	+0.3770	0.5450	0.1783	+53	-21
161 B. Capricorni	6.4	1.74	8.6	18 14.9	15 10.6	-11 50.3	+0.5132	0.5432	0.1864	+63	-14
29 Aquarii (mean)	6.5	1.72	8.4	17 18.6	15 18.1	-11 43.0	-0.4557	0.5431	0.1866	+10	-70
56 Aquarii	6.1	1.58	8.8	14 57.1	7 04 21.4	+0 54.4	-0.3740	0.5384	0.2062	+17	-64
69 Aquarii	5.6	+1.49	+9.3	-14 26.0	12 37.4	+ 8 54.4	+0.8309	0.5358	+0.2170	+76	+3
τ Aquarii	4.4	1.48	9.3	13 58.2	13 31.3	+ 9 46.5	+0.5402	0.5355	0.2180	+68	-13
74 Aquarii	5.8	1.44	8.8	11 59.8	15 23.0	+11 34.6	-1.1196	0.5350	0.2203	-27	-90
257 B. Aquarii	6.3	1.42	9.5	13 27.2	18 18.2	-9 35.8	+1.0539	0.5342	0.2237	+77	+18
290 B. Aquarii	6.3	1.33	9.2	11 04.6	8 01 33.3	-2 34.5	+0.2188	0.5324	0.2313	+50	-30
ψ^1 Aquarii	4.5	+1.33	+8.8	-9 28.7	02 08.0	-2 00.9	-1.3163	0.5323	+0.2319	-44	-87
ψ^2 Aquarii	4.6	1.31	8.8	9 34.4	03 07.0	-1 03.9	-0.9876	0.5321	0.2329	-14	-90
ψ^3 Aquarii	5.2	1.30	9.0	10 00.1	03 37.5	-0 34.3	-0.4217	0.5320	0.2333	+18	-67
336 B. Aquarii	6.3	1.25	9.2	9 39.6	08 29.2	+ 4 08.1	+0.3669	0.5310	0.2377	+61	-23
351 B. Aquarii	6.5	1.21	8.7	7 51.6	11 38.8	+ 7 11.7	-0.7484	0.5306	0.2404	0	-90
376 B. Aquarii	6.3	+1.14	+8.7	-6 46.7	17 57.6	-10 41.5	-0.3384	0.5298	+0.2450	+23	-61
30 Piscium	4.7	1.06	8.8	6 24.7	9 00 28.9	-4 22.6	+0.8928	0.5294	0.2490	+84	+6
33 Piscium	4.8	1.04	8.9	6 06.5	02 07.5	-2 47.2	+0.9881	0.5294	0.2499	+84	+12
24 B. Ceti	6.0	1.02	8.8	5 38.7	04 32.7	-0 26.5	+1.1157	0.5294	0.2510	+85	+21
54 B. Ceti	6.3	0.93	8.0	2 36.9	11 26.1	+ 6 13.9	-0.2701	0.5297	0.2538	+28	-57
14 Ceti	5.4	+0.87	+7.5	-0 53.9	16 47.1	+11 24.7	-0.6722	0.5302	+0.2553	+7	-87

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
26 Ceti	6.0	+0.72	+7.3	+0 59.0	10 06 24.2	+0 35.9	+0.8876	0.5330	+0.2564	+90	+5
33 Ceti	6.1	0.68	7.0	2 03.9	09 37.6	+3 43.0	+0.6083	0.5339	0.2561	+81	-11
f Piscium	5.3	0.64	6.6	3 14.3	13 04.3	+7 03.0	+0.2930	0.5351	0.2555	+58	-27
μ Piscium	5.0	0.58	5.8	5 46.5	18 54.5	-11 18.1	-0.8034	0.5373	0.2539	-1	-85
γ Piscium	4.6	0.51	6.2	5 07.5	11 00 12.1	-6 11.0	+1.1953	0.5395	0.2518	+90	+29
ξ^1 Ceti	4.6	+0.35	+5.3	+8.30.7	14 43.9	+7 51.7	+1.3593	0.5472	+0.2426	+79	+51
ξ Arietis	5.5	0.29	4.8	10 17.2	20 03.2	-10 59.9	+0.8444	0.5505	0.2379	+90	+7
31 Arietis	5.7	0.24	4.2	12 08.2	12 01 18.0	-5 55.9	+0.2132	0.5540	0.2326	+54	-27
MARS	0.8	.	.	13 50.0	03 07.0	-4 10.7	-1.0756	0.5283	0.2217	-19	-77
38 Arietis	5.2	0.20	4.2	12 08.7	04 58.9	-2 22.7	+1.0537	0.5565	0.2284	+90	+22
σ Arietis	5.4	+0.16	+3.5	+14 47.2	07 49.3	+0 21.7	-0.9589	0.5586	+0.2250	-12	-76
145 B. Arietis	6.5	+0.10	3.3	15 34.7	13 31.5	+5 51.6	-0.4904	0.5627	0.2173	+16	-64
26 B. Tauri	6.4	-0.03	2.8	17 35.9	13 01 57.6	-6 09.6	+0.0690	0.5723	0.1975	+46	-30
13 Tauri	5.6	0.07	2.5	19 28.3	05 19.7	-2 55.1	-1.1492	0.5749	0.1913	-28	-71
14. Tauri	6.2	0.07	2.5	19 26.4	05 55.9	-2 20.2	-1.0021	0.5754	0.1902	-16	-71
43 Tauri	5.5	-0.17	+2.8	+19 25.2	16 14.2	+7 34.4	+0.8722	0.5834	+0.1693	+90	+17
6 Tauri	4.8	0.21	2.6	20 24.2	19 27.8	+10 40.4	+0.4258	0.5857	0.1622	+69	-7
51 Tauri	5.6	0.21	2.4	21 24.3	19 53.6	+11 05.3	-0.5041	0.5861	0.1612	+14	-58
53 Tauri	5.3	0.21	2.5	20 58.2	20 19.0	+11 29.6	-0.0018	0.5864	0.1603	+42	-29
56 Tauri	5.2	0.22	2.4	21 36.1	20 22.8	+11 33.3	-0.6218	0.5864	0.1601	+7	-65
224 B. Tauri	6.1	-0.22	+2.6	+20 39.2	21 29.3	-11 22.8	+0.5004	0.5872	+0.1576	+75	-3.
227 B. Tauri	5.9	0.23	2.6	20 49.0	21 56.7	-10 56.6	+0.4095	0.5876	0.1565	+68	-8
κ Tauri	4.1	0.24	2.3	22 07.9	22 38.9	-10 16.0	-0.7926	0.5881	0.1549	-3	-68
67 Tauri	5.4	0.23	2.3	22 02.2	22 40.1	-10 14.8	-0.6959	0.5881	0.1548	+3	-69
v Tauri	4.2	0.24	2.2	22 39.1	23 00.8	-9 54.9	-1.2562	0.5884	0.1540	-43	-68
247 B. Tauri	5.8	-0.24	+2.5	+21 27.7	23 41.9	-9 15.4	+0.0373	0.5888	+0.1524	+44	-27
284 B. Tauri	6.0	0.27	2.1	23 11.7	14 03 00.0	-6 05.2	-1.2021	0.5912	0.1445	-37	-67
τ Tauri	4.3	0.30	2.3	22 49.2	05 15.1	-3 55.5	-0.5097	0.5927	0.1389	+13	-56
300 B. Tauri	6.2	0.31	2.2	23 29.9	06 35.2	-2 38.7	-1.0017	0.5936	0.1355	-18	-67
99 Tauri	6.0	0.35	2.3	23 50.3	11 15.1	+1 49.9	-0.7364	0.5965	0.1234	0	-67
103 Tauri	5.5	-0.38	+2.4	+24 10.3	15 11.2	+5 36.4	-0.6043	0.5987	+0.1128	+8	-60
118 Tauri	5.4	0.43	2.5	25 05.7	23 11.4	-10 43.2	-0.7107	0.6028	0.0903	+1	-66
121 Tauri	5.1	0.44	2.8	23 59.6	15 01 31.5	-8 28.8	+0.5893	0.6038	0.0835	+84	+9
125 Tauri	5.1	0.46	2.5	25 51.5	03 06.5	-6 57.9	-1.1419	0.6044	+0.0788	-32	-65
NEW MOON.											
η Leonis	3.6	-0.24	+4.2	+17 06.9	19 12 16.6	-1 58.6	+0.1806	0.5524	-0.1944	+52	-24
42 Leonis	6.1	0.19	3.8	15 20.4	18 52.4	+4 23.7	+0.7141	0.5464	0.2036	+90	+3
46 Leonis	5.8	0.16	3.6	14 30.5	23 40.0	+9 01.7	+0.5930	0.5422	0.2096	+81	-5
k Leonis	5.5	-0.11	3.4	14 34.6	20 06 21.8	-8 29.7	-0.9077	0.5364	0.2170	-8	-76
ϵ Leonis	4.1	+0.06	+2.3	+10 55.6	21 00 40.2	+9 14.1	-1.1929	0.5225	-0.2321	-28	-80
ω Virginis	5.4	0.11	1.5	8 32.0	08 01.3	-7 38.2	-0.3760	0.5177	0.2361	+22	-63
ξ^1 Virginis	4.8	0.14	1.5	8 39.5	11 30.4	-4 15.2	-1.3376	0.5156	0.2377	-44	-82
γ Virginis	4.2	0.14	0.9	6 56.0	11 48.5	-3 57.8	-0.4311	0.5154	0.2378	+67	-19
36 B. Virginis	6.5	0.22	+0.5	5 57.6	21 05.2	+5 02.6	-0.7519	0.5104	0.2409	+2	-85
c Virginis	5.1	+0.29	-0.4	+3 42.8	22 05 50.7	-10 27.0	-0.4582	0.5065	-0.2424	+18	-70
250 B. Virginis	5.9	0.39	1.0	+2 15.0	15 28.5	-1 06.2	-1.2185	0.5031	0.2427	-29	-88
65 Virginis	6.0	0.62	3.7	-4 33.0	23 15 50.2	-1 24.9	+0.3046	0.4987	0.2373	+58	-26
66 Virginis	5.7	0.63	3.8	4 47.4	16 30.3	-0 45.9	+0.4086	0.4987	0.2371	+65	-20
72 Virginis	6.1	0.66	4.3	6 06.0	19 42.6	+2 21.0	+1.0853	0.4986	0.2358	+84	+19
l Virginis	4.8	+0.66	-4.2	-5 53.1	20 33.4	+3 10.5	+0.6513	0.4986	-0.2354	+83	-8

ELEMENTS OF OCCULTATIONS, 1928.

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JULY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declination.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
80 Virginis	5.6	+0.69	-3.9	-5 01.9	23 22 30.0	+5 03.8	-0.7410	0.4986	-0.2345	+2	-90
88 Virginis	6.5	0.76	4.5	6 28.8	24 05 28.1	+11 50.4	-0.7754	0.4989	0.2308	0	-90
598 B. Virginis	6.1	0.79	5.0	7 42.4	09 06.0	-8 37.8	-0.2635	0.4993	0.2287	+27	-57
623 B. Virginis	6.5	0.85	5.3	8 54.8	14 11.4	-3 41.0	-0.0924	0.5000	0.2254	+35	-47
95 Virginis	5.4	0.86	5.4	8 58.3	15 28.4	-2 26.1	-0.3166	0.5002	0.2245	+23	-60
96 Virginis	6.5	+0.88	-5.7	-9 59.7	16 42.2	-1 14.4	+0.5345	0.5004	-0.2236	+72	-14
κ Virginis	4.4	0.90	5.6	9 56.5	18 48.5	+0 48.4	+0.0054	0.5008	0.2221	+40	-42
2 Libræ	6.3	0.97	6.2	11 23.3	25 00 28.8	+6 19.1	+0.3528	0.5021	0.2176	+58	-23
4 G. Libræ	6.5	0.97	6.2	11 20.7	01 09.5	+6 58.7	+0.1584	0.5022	0.2171	+47	-33
6 B. Libræ	6.2	1.02	6.1	12 00.1	07 47.3	-10 34.8	-0.5381	0.5041	0.2113	+10	-76
22 B. Libræ	6.4	+1.12	-6.5	-12 32.4	13 33.2	-4 58.8	-1.1469	0.5060	-0.2058	-29	-90
μ Libræ	5.4	1.12	6.9	13 51.1	14 17.2	-4 16.1	+0.1527	0.5063	0.2050	+45	-34
ν Libræ	5.3	1.24	7.5	15 58.9	23 22.0	+4 33.0	+0.6880	0.5098	0.1953	+75	-5
22 Libræ	6.5	1.24	7.6	16 12.5	23 27.9	+4 38.8	+0.9208	0.5099	0.1952	+74	+10
32 Libræ	5.9	1.37	7.3	16 28.1	26 10 33.1	-8 35.6	-0.8830	0.5149	0.1818	-14	-90
34 Libræ	6.0	+1.39	-7.2	-16 21.9	11 47.4	-7 23.5	-1.2212	0.5155	-0.1802	-40	-90
ζ Libræ	5.6	1.40	7.2	16 36.7	12 56.1	-6 16.9	-1.1539	0.5160	0.1787	-34	-90
41 Libræ	5.3	1.45	7.9	19 04.1	15 56.9	-3 21.5	+1.0311	0.5176	0.1746	+71	+18
κ Libræ	5.0	1.47	8.0	19 26.9	17 29.1	-1 52.0	+1.1857	0.5184	0.1725	+71	+32
λ Libræ	4.9	1.54	7.9	19 57.3	23 12.3	+3 40.7	+0.7830	0.5214	0.1642	+71	+2
47 Libræ	5.8	+1.54	-7.6	-19 10.4	27 00 03.1	+4 29.9	-0.2203	0.5218	-0.1630	+20	-55
β^1 Scorpii	2.9	1.61	7.4	19 36.7	05 13.6	+9 30.9	-0.5587	0.5247	0.1550	+1	-80
β^2 Scorpii	5.0	1.61	7.4	19 36.5	05 13.8	+9 31.1	-0.5636	0.5247	0.1550	+1	-80
ω^1 Scorpii	4.3	1.62	7.7	20 28.7	05 53.5	+10 09.6	+0.2961	0.5250	0.1546	+46	-25
ω^2 Scorpii	4.6	1.63	7.7	20 40.7	06 10.9	+10 26.4	+0.4726	0.5252	0.1535	+57	-16
84 B. Scorpii	6.3	+1.67	-7.6	-20 55.7	09 39.5	-10 11.5	+0.2249	0.5271	-0.1479	+42	-29
51 G. Scorpii	6.5	1.69	7.6	21 07.7	10 52.6	-9 00.7	+0.2660	0.5278	0.1459	+43	-27
58 G. Scorpii	6.2	1.69	7.2	20 02.7	11 56.4	-7 58.8	-1.0835	0.5284	0.1442	-33	-90
ω Ophiuchi	4.5	1.78	7.1	21 18.9	18 13.3	-1 53.9	-0.5520	0.5320	0.1334	-1	-80
24 Ophiuchi	5.5	1.93	6.7	23 02.4	28 05 55.5	+9 25.6	-0.0864	0.5386	0.1117	+22	-47
39 Ophiuchi	5.1	+2.05	-6.1	-24 12.7	15 47.0	-5 02.5	+0.1983	0.5440	-0.0920	+35	-31
θ Ophiuchi	3.3	2.08	6.1	24 55.9	17 36.7	-3 16.4	+0.8241	0.5450	0.0882	+66	+6
191 B. Ophiuchi	6.3	2.09	5.7	24 10.8	19 02.5	-1 53.5	-0.1243	0.5457	0.0852	+17	-49
44 Ophiuchi	4.1	2.09	5.7	24 06.7	19 37.5	-1 19.7	-0.2486	0.5460	0.0839	+10	-57
51 Ophiuchi	4.8	2.11	5.4	23 54.6	21 56.0	+0 54.1	-0.6588	0.5471	0.0790	-13	-90
63 Ophiuchi	6.1	+2.23	-4.4	-24 52.5	29 08 32.5	+11 09.0	-0.3137	0.5521	-0.0556	+4	-61
7 Sagittarii	5.5	2.26	3.8	24 17.0	12 06.4	-9 24.5	-1.1434	0.5537	0.0474	-48	-90
9 Sagittarii	6.0	2.26	3.8	24 21.9	12 33.7	-8 58.1	-1.0765	0.5538	0.0463	-42	-90
67 B. Sagittarii	6.4	2.34	3.3	25 38.1	19 07.4	-2 38.2	+0.0570	0.5561	0.0310	+21	-38
70 B. Sagittarii	6.4	2.34	2.9	24 57.0	20 23.1	-1 25.1	-0.7266	0.5568	0.0280	-21	-90
68 G. Sagittarii	6.2	+2.39	-2.9	-26 40.8	23 05.8	+1 11.9	+1.0915	0.5577	-0.0216	+64	+28
λ Sagittarii	2.9	2.37	2.8	25 27.8	23 13.3	+1 19.1	-0.2358	0.5577	0.0213	+4	-56
69 G. Sagittarii	6.3	2.40	2.9	26 48.2	23 15.6	+1 21.3	+1.2217	0.5577	0.0212	+64	+45
86 B. Sagittarii	6.5	2.39	2.8	26 37.8	23 38.0	+1 43.1	+1.0260	0.5578	0.0203	+64	+22
126 B. Sagittarii	5.7	2.42	1.6	25 05.1	30 06 37.3	+8 27.5	-0.7380	0.5598	-0.0034	-24	-90
σ Sagittarii	2.1	+2.47	-1.2	-26 23.3	11 09.6	-11 09.9	+0.6864	0.5608	+0.0077	+60	-2
162 B. Sagittarii	6.4	2.45	0.7	24 58.5	12 31.2	-9 51.2	-0.8341	0.5611	0.0110	-29	-90
127 G. Sagittarii	6.4	2.46	0.6	25 02.6	13 25.2	-8 59.1	-0.7480	0.5612	0.0132	-24	-90
172 B. Sagittarii	5.8	2.46	0.6	24 56.9	14 19.0	-8 07.2	-0.8391	0.5614	0.0154	-29	-90
189 B. Sagittarii	6.1	2.47	-0.1	24 46.3	16 49.9	-5 41.7	-0.9828	0.5618	0.0216	-38	-90
201 B. Sagittarii	5.9	+2.51	0.0	-26 01.7	18 58.8	-3 37.4	+0.4310	0.5621	+0.0269	+42	-17

ELEMENTS OF OCCULTATIONS, 1928.

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
η Sagittarii	4.8	+2.50	+0.3	-25 22.9	30 19 59.5	-2 38.9	-0.2402	0.5622	+0.0294	+5	-57
χ Sagittarii	4.9	2.51	1.0	24 39.0	31 00 13.5	+1 26.1	-0.8844	0.5626	0.0398	-30	-90
51 Sagittarii	5.8	2.53	1.7	24 52.6	04 53.1	+5 55.7	-0.4251	0.5628	0.0513	-3	-70
λ Sagittarii	4.7	2.54	1.7	25 02.6	05 10.5	+6 12.5	-0.2311	0.5628	0.0520	+7	-56
308 B. Sagittarii	6.3	+2.54	+2.7	-24 07.3	12 49.3	-10 25.1	-0.7534	0.5627	+0.0706	-19	-90

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36 B. Capricorni	6.2	+2.53	+5.3	-22 37.8	1 04 10.2	+4 23.0	-0.9810	0.5607	+0.1068	-29	-90
56 B. Capricorni	6.3	2.58	6.2	24 02.2	08 48.7	+8 51.5	+1.0399	0.5597	0.1173	+66	+21
17 Capricorni	5.8	+2.51	+6.3	-21 46.5	11 28.6	+11 25.9	-1.0486	0.5590	+0.1233	-33	-90
χ Capricorni	5.3	2.49	7.7	21 28.9	21 22.7	-3 00.9	-0.0316	0.5563	0.1445	+27	-44
27 Capricorni	6.1	2.48	7.7	20 50.7	21 49.2	-2 35.3	-0.6435	0.5562	0.1454	-5	-89
ϕ Capricorni	5.3	2.47	8.1	20 57.0	2 00 31.8	+0 01.7	-0.1305	0.5553	0.1509	+22	-50
33 Capricorni	5.3	2.46	8.6	21 09.4	04 20.4	+3 42.4	+0.6777	0.5541	0.1585	+69	-4
35 Capricorni	6.0	+2.47	+8.8	-21 30.4	05 43.3	+5 02.4	+1.2686	0.5536	+0.1612	+69	+44
128 B. Capricorni	6.5	2.43	8.9	19 27.6	06 58.2	+6 14.7	-0.6917	0.5532	0.1636	-6	-90
37 Capricorni	5.7	2.43	9.2	20 24.2	09 09.1	+8 21.1	+0.6660	0.5524	0.1677	+69	-5
ϵ Capricorni	4.7	2.42	9.3	19 47.2	10 09.5	+9 19.5	+0.1848	0.5520	0.1696	+41	-32
κ Capricorni	4.8	2.41	9.6	19 11.6	12 40.7	+11 45.5	-0.0089	0.5512	0.1743	+32	-42
143 B. Capricorni	6.1	+2.42	+9.7	-19 56.9	12 55.9	-11 59.8	+0.8317	0.5511	+0.1747	+71	+5
154 B. Capricorni	6.1	2.38	10.1	18 57.4	16 46.8	-8 16.7	+0.4720	0.5497	0.1816	+59	-16
161 B. Capricorni	6.4	2.35	10.6	18 14.8	21 34.6	-3 38.8	+0.6159	0.5480	0.1898	+68	-8
29 Aquarii (mean)	6.5	2.33	10.5	17 18.6	21 42.0	-3 31.5	-0.3464	0.5479	0.1899	+16	-63
56 Aquarii	6.1	2.23	11.6	14 57.1	3 10 33.8	+8 54.3	-0.2426	0.5432	0.2097	+23	-56
69 Aquarii	5.6	+2.17	+12.4	-14 26.0	18 42.6	-7 12.9	+0.9688	0.5405	+0.2205	+76	+12
τ Aquarii	4.4	2.16	12.3	13 58.2	19 35.8	-6 21.5	+0.6814	0.5402	0.2216	+76	-5
74 Aquarii	5.8	2.13	12.2	11 59.8	21 26.0	-4 34.9	-0.9656	0.5396	0.2238	-14	-90
257 B. Aquarii	6.3	2.12	12.7	13 27.2	4 00 18.8	-1 47.7	+1.2002	0.5387	0.2271	+77	+30
290 B. Aquarii	6.3	2.05	12.8	11 04.6	07 28.1	+5 07.5	+0.3812	0.5367	0.2347	+62	-22
ψ^1 Aquarii	4.5	+2.04	+12.6	-9 28.6	08 02.4	+5 40.7	-1.1450	0.5366	+0.2352	-26	-90
ψ^2 Aquarii	4.6	2.02	12.7	9 34.3	09 00.7	+6 37.2	-0.8167	0.5363	0.2362	-4	-90
ψ^3 Aquarii	5.2	2.02	12.8	10 00.1	09 30.8	+7 06.3	-0.2529	0.5362	0.2367	+27	-56
336 B. Aquarii	6.3	1.98	13.0	9 39.5	14 19.0	+11 45.3	+0.5390	0.5351	0.2409	+72	-13
351 B. Aquarii	6.5	1.94	12.8	7 51.6	17 26.4	-9 13.4	-0.5668	0.5344	0.2434	+11	-78
376 B. Aquarii	6.3	+1.89	+12.9	-6 46.6	23 41.2	-3 10.6	-0.1504	0.5333	+0.2479	+33	-50
30 Piscium	4.7	1.82	13.2	6 24.6	5 06 08.9	+3 04.8	+1.0850	0.5325	0.2516	+84	+19
33 Piscium	4.8	1.81	13.3	6 06.4	07 46.7	+4 39.5	+1.1821	0.5324	0.2524	+84	+27
24 B. Ceti	6.0	1.79	13.3	5 38.7	10 10.7	+6 58.9	+1.3124	0.5322	0.2535	+84	+40
54 B. Ceti	6.3	1.72	12.8	2 36.8	17 01.3	-10 23.5	-0.0627	0.5319	0.2559	+39	-45
14 Ceti	5.4	+1.67	+12.4	-0 53.8	22 20.6	-5 14.4	-0.4594	0.5320	+0.2571	+18	-69
26 Ceti	6.0	1.53	12.3	+0 59.1	6 11 55.8	+7 54.8	+1.1103	0.5335	0.2573	+90	+20
33 Ceti	6.1	1.50	12.0	2 04.0	15 09.2	+11 01.9	+0.8329	0.5342	0.2568	+90	+2
f Piscium	5.3	1.46	11.7	3 14.3	18 36.2	-9 37.7	+0.5189	0.5350	0.2560	+74	-15
μ Piscium	5.0	1.41	11.0	5 46.6	7 00 27.4	-3 57.8	-0.5779	0.5365	0.2540	+12	-77
ξ Arietis	5.5	+1.15	+9.6	+10 17.3	8 01 48.1	-3 27.6	+1.0770	0.5470	+0.2363	+90	+22
JUPITER	-2.1	...	...	13 28.3	06 09.0	+0 44.4	-1.1359	0.5468	0.2311	-24	-77
31 Arietis	5.7	1.11	8.9	12 08.3	07 07.0	+1 40.5	+0.4398	0.5499	0.2306	+68	-16
38 Arietis	5.2	1.06	8.8	12 08.8	10 51.1	+5 16.8	+1.2851	0.5520	0.2263	+89	+43
σ Arietis	5.4	1.03	7.9	14 47.3	13 44.1	+8 03.9	-0.7452	0.5538	0.2227	+2	-76
145 B. Arietis	6.5	+0.97	+7.5	+15 34.7	19 32.1	-10 20.4	-0.2770	0.5574	+0.2147	+27	-51

ELEMENTS OF OCCULTATIONS, 1928.

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name:	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
175 B. Arietis	6.4	+0.87	+ 6.4	+18 30.4	9 05 10.9	- 1 02.2	-1.2381	0.5636	+0.1997	-37	-72
26 B. Tauri	6.4	0.84	6.5	17 36.0	08 12.6	+ 1 52.9	+0.2767	0.5657	0.1945	+58	-19
13 Tauri	5.6	0.80	6.0	19 28.3	11 39.0	+ 5 11.8	-0.9580	0.5680	0.1883	-13	-71
14 Tauri	6.2	0.80	6.0	19 26.4	12 16.0	+ 5 47.4	-0.8100	0.5684	0.1871	- 3	-71
MARS	0.6	..	..	19 07.5	18 12.5	+11 30.7	+0.5882	0.5475	0.1698	+82	- 1
43 Tauri	5.5	+0.68	+ 5.8	+19 25.3	22 48.6	- 8 03.7	+1.0735	0.5756	+0.1661	+90	+31
ω Tauri	4.8	0.64	5.4	20 24.3	10 02 06.8	- 4 53.1	+0.6178	0.5778	0.1589	+86	+ 3
51 Tauri	5.6	0.64	5.1	21 24.4	02 33.3	- 4 27.5	-0.3237	0.5781	0.1579	+24	-47
53 Tauri	5.3	0.64	5.2	20 58.3	02 59.4	- 4 02.4	+0.1840	0.5781	0.1570	+53	-20
56 Tauri	5.2	0.64	5.2	21 36.1	03 03.2	- 3 58.8	-0.4435	0.5785	0.1569	+17	-54
224 B. Tauri	6.1	+0.62	+ 5.4	+20 39.2	04 11.4	- 2 53.2	+0.6907	0.5792	+0.1543	+90	+ 7
227 B. Tauri	5.9	0.62	5.3	20 49.0	04 39.4	- 2 26.2	+0.5981	0.5795	0.1533	+84	+ 2
κ Tauri	4.1	0.61	4.8	22 07.9	05 22.7	- 1 44.6	-0.6196	0.5800	0.1516	+ 7	-65
67 Tauri	5.4	0.61	4.8	22 02.3	05 24.0	- 1 43.3	-0.5216	0.5800	0.1516	+13	-59
ν Tauri	4.2	0.61	4.6	22 39.2	05 45.1	- 1 23.1	-1.0892	0.5802	0.1508	-24	-68
72 Tauri	5.4	+0.60	+ 4.6	+22 50.2	06 09.0	- 1 00.1	-1.2149	0.5804	+0.1498	-38	-68
247 B. Tauri	5.8	0.60	5.0	21 27.7	06 27.3	- 0 42.4	+0.2191	0.5806	0.1491	+55	-17
284 B. Tauri	6.0	0.57	4.4	23 11.8	09 50.5	+ 2 32.8	-1.0405	0.5828	0.1412	-21	-67
τ Tauri	4.3	0.54	4.5	22 49.3	12 09.0	+ 4 46.0	-0.3425	0.5842	0.1356	+23	-46
300 B. Tauri	6.2	0.52	4.3	23 29.9	13 31.2	+ 6 04.9	-0.8427	0.5850	0.1323	- 7	-67
99 Tauri	6.0	+0.47	+ 4.1	+23 50.3	18 18.4	+10 40.9	-0.5811	0.5878	+0.1202	+ 9	-60
103 Tauri	5.5	0.43	4.0	24 10.3	22 20.8	- 9 26.3	-0.4536	0.5900	0.1097	+16	-51
118 Tauri	5.4	0.34	3.6	25 05.7	11 06 33.9	- 1 33.0	-0.5741	0.5938	0.0874	+ 9	-56
121 Tauri	5.1	0.32	3.9	23 59.6	08 57.8	+ 0 45.0	+0.7187	0.5948	0.0807	+90	+17
125 Tauri	5.1	0.30	3.3	25 51.5	10 35.3	+ 2 18.5	-1.0174	0.5954	0.0761	-21	-65
132 Tauri	5.0	+0.27	+ 3.7	+24 32.8	14 10.1	+ 5 44.6	+0.5630	0.5966	+0.0658	+82	+ 9
412 B. Tauri	5.8	0.24	3.7	24 14.5	17 12.2	+ 8 39.3	+1.0570	0.5975	0.0570	+90	+41
139 Tauri	4.7	0.24	3.3	25 56.8	17 35.2	+ 9 01.4	-0.6450	0.5976	0.0559	+ 5	-59
5 Geminorum	5.9	0.19	3.6	24 26.3	22 46.3	-10 00.3	+1.1306	0.5988	0.0406	+90	+48
52 B. Geminorum	6.5	0.10	3.5	24 39.2	12 08 37.4	- 0 33.4	+1.1705	0.5997	0.0112	+90	+54
ϵ Geminorum	3.2	+0.08	+ 3.3	+25 12.3	11 04.8	+ 1 47.9	+0.6303	0.5997	+0.0037	+90	+18
37 Geminorum	5.7	0.05	3.3	25 28.1	15 24.4	+ 5 56.8	+0.3523	0.5994	-0.0092	+64	+ 3
39 Geminorum	6.2	0.03	3.1	26 10.7	16 43.6	+ 7 12.7	-0.3820	0.5992	0.0132	+20	-37
40 Geminorum	6.3	+0.04	3.1	26 00.9	16 58.8	+ 7 27.4	-0.2194	0.5992	0.0139	+29	-28
52 Geminorum	6.1	0.00	3.3	25 00.8	22 48.5	-10 57.3	+0.6649	0.5981	0.0313	+90	+18
134 B. Geminorum	6.5	0.00	+ 2.9	+26 49.3	23 41.3	-10 06.6	-1.1996	0.5979	-0.0339	-41	-64
Δ Geminorum	5.1	-0.03	3.2	25 11.5	13 02 10.4	- 7 43.6	+0.3618	0.5972	0.0412	+65	0
176 B. Geminorum	6.3	0.06	3.4	24 31.4	07 52.0	- 2 15.9	+0.7594	0.5953	0.0577	+90	+20
181 B. Geminorum	6.0	0.06	3.4	24 23.3	08 14.4	- 1 54.4	+0.8758	0.5952	0.0588	+90	+27
ζ Geminorum	5.5	0.07	3.1	25 57.4	10 07.5	- 0 05.8	-0.8368	0.5944	0.0642	- 7	-65
κ Geminorum	3.6	-0.07	+ 3.3	+24 34.4	10 16.3	+ 0 02.6	+0.5624	0.5943	-0.0646	+82	+ 9
NEW MOON.											
ω Virginis	5.4	-0.02	+ 1.7	+ 8 32.0	17 17 10.4	+ 3 19.0	-0.5516	0.5207	-0.2394	+13	-75
ν Virginis	4.2	0.00	1.2	6 56.0	20 55.7	+ 6 57.4	+0.2456	0.5186	0.2411	+56	-28
36 B. Virginis	6.5	+0.04	+ 1.0	+ 5 57.6	18 06 07.1	- 8 07.6	-0.9508	0.5139	-0.2442	-10	-85
ζ Virginis	5.1	0.08	+ 0.3	+ 3 42.8	14 47.2	+ 0 17.3	-0.6734	0.5101	0.2457	+ 7	-89
46 Virginis	6.1	0.23	- 1.7	- 2 58.9	10 12 09.4	- 2 57.1	+1.2986	0.5039	0.2441	+88	+37
48 Virginis	6.5	0.24	1.9	3 16.6	13 55.9	- 1 13.6	+1.1851	0.5035	0.2436	+87	+26
65 Virginis	6.0	0.32	2.4	4 32.9	20 00 23.0	+ 8 55.8	+0.0410	0.5022	0.2400	+45	-40
66 Virginis	5.7	+0.34	- 2.5	- 4 47.3	01 02.6	+ 9 34.2	+0.1439	0.5021	-0.2397	+50	-34

AUGUST.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
72 Virginis	6.1	+0.35	-2.9	6 06.0	20 04 12.7	-11 21.0	+0.8149	0.5020	-0.2383	+84	+1
1 Virginis	4.8	0.36	2.9	5 53.1	05 03.0	-10 32.1	+0.3819	0.5019	0.2378	+63	-22
80 Virginis	5.6	0.38	2.6	5 01.8	06 58.2	-8 40.2	-1.0064	0.5019	0.2369	-14	-90
88 Virginis	6.5	0.44	3.2	6 28.8	13 51.8	-1 58.1	-1.0460	0.5019	0.2330	-17	-90
598 B. Virginis	6.1	0.46	3.6	7 42.4	17 27.5	+1 31.5	-0.5385	0.5021	0.2307	+13	-75
623 B. Virginis	6.5	+0.52	-4.0	8.54.8	22 29.9	+6 25.3	-0.3709	0.5026	-0.2272	+20	-64
95 Virginis	5.4	0.52	4.0	8 58.3	23 46.1	+7 39.4	-0.5950	0.5027	0.2262	+9	-80
96 Virginis	6.5	0.54	4.4	9 59.7	21 00 59.3	+8 50.6	+0.2526	0.5029	0.2253	+54	-29
κ Virginis	4.4	0.56	4.3	9 56.4	03 04.4	+10 52.1	-0.2756	0.5032	0.2237	+25	-58
2 Libræ	6.3	0.61	4.9	11 23.2	08 41.8	-7 40.1	+0.0690	0.5042	0.2190	+42	-38
4 G. Libræ	6.5	+0.62	-4.9	-11 20.7	09 22.2	-7 00.8	-0.1250	0.5043	-0.2184	+32	-49
6 B. Libræ	6.2	0.66	4.9	12 00.1	15 57.0	-0 37.3	-0.8207	0.5058	0.2123	-5	-90
μ Libræ	5.4	0.76	5.7	13 51.1	22 24.3	+5 38.9	-0.1321	0.5076	0.2057	+30	-49
ν Libræ	5.3	0.86	6.4	15 58.8	22 07 26.2	-9 35.0	+0.4036	0.5106	0.1956	+59	-20
22 Libræ	6.5	0.86	6.5	16 12.5	07 32.1	-9 29.3	+0.6360	0.5106	0.1955	+73	-8
26 Libræ	6.3	+0.92	-6.9	-17 30.1	11 31.9	-5 36.5	+1.2934	0.5121	-0.1907	+73	+44
28 Libræ	6.2	0.96	7.0	17 54.0	14 47.4	-2 26.8	+1.1184	0.5134	0.1866	+73	+25
32 Libræ	5.9	1.00	6.4	16 28.1	18 34.8	+1 13.9	-1.1614	0.5150	0.1816	-34	-90
41 Libræ	5.3	1.08	7.2	19 04.1	23 57.9	+6 27.2	+0.7534	0.5173	0.1742	+71	0
κ Libræ	5.0	1.09	7.4	19 26.9	23 01 30.0	+7 56.5	+0.9087	0.5180	0.1720	+71	+10
λ Libræ	4.9	+1.17	-7.3	-19 57.3	07 12.8	-10 31.1	+0.5102	0.5207	-0.1636	+60	-14
47 Libræ	5.8	1.18	7.0	19 10.4	08 03.6	-9 41.9	-0.4922	0.5210	0.1623	+6	-74
10 G. Scorpæ	5.9	1.20	7.5	20 46.7	09 22.2	-8 25.7	+1.0702	0.5217	0.1603	+70	+22
β^1 Scorpæ	2.9	1.24	7.0	19 36.7	13 14.1	-4 40.9	-0.8268	0.5236	0.1542	-14	-90
β^2 Scorpæ	5.0	1.24	7.0	19 36.5	13 14.3	-4 40.7	-0.8316	0.5236	0.1542	-14	-90
ω^1 Scorpæ	4.3	+1.26	-7.3	-20 28.7	13 54.0	-4 02.2	+0.0284	0.5239	-0.1532	+32	-40
ω^2 Scorpæ	4.6	1.27	7.4	20 40.7	14 11.4	-3 45.4	+0.2051	0.5240	0.1527	+41	-30
84 B. Scorpæ	6.3	1.31	7.3	20 55.7	17 40.2	-0 23.1	-0.0397	0.5258	0.1470	+28	-44
51 G. Scorpæ	6.5	1.33	7.3	21 07.7	18 53.4	+0 47.8	+0.0034	0.5264	0.1450	+29	-42
ω Ophiuchi	4.5	1.43	7.0	21 18.9	24 02 14.8	+7 55.4	-0.8091	0.5302	0.1322	-15	-90
24 Ophiuchi	5.5	+1.60	-6.9	-23 02.4	13 59.0	-4 43.1	-0.3308	0.5363	-0.1104	+9	-62
137 B. Ophiuchi	6.3	1.72	7.1	25 10.2	21 10.9	+2 14.7	+1.2725	0.5400	0.0960	+65	+52
39 Ophiuchi	5.1	1.74	6.5	24 12.7	23 52.8	+4 51.2	-0.0338	0.5413	0.0905	+21	-44
θ Ophiuchi	3.3	1.78	6.6	24 55.9	25 01 43.0	+6 37.7	+0.5950	0.5422	0.0866	+58	-8
191 B. Ophiuchi	6.3	1.79	6.2	24 10.9	03 09.2	+8 01.0	-0.3526	0.5430	0.0836	+5	-64
44 Ophiuchi	4.1	+1.79	-6.2	-24 06.8	03 44.3	+8 34.9	-0.4762	0.5432	-0.0824	-2	-74
51 Ophiuchi	4.8	1.82	5.9	23 54.6	06 03.5	+10 49.4	-0.8838	0.5444	0.0774	-26	-90
63 Ophiuchi	6.1	1.98	5.2	24 52.5	16 43.0	-2 52.8	-0.5234	0.5492	0.0540	-7	-78
67 B. Sagittarii	6.4	2.12	4.3	25 38.1	28 03 21.1	+7 23.4	-0.1362	0.5534	0.0294	+10	-50
70 B. Sagittarii	6.4	2.12	3.9	24 57.0	04 37.1	+8 36.8	-0.9185	0.5538	0.0264	-33	-90
68 G. Sagittarii	6.2	+2.19	-4.1	-26 40.8	07 20.6	+11 14.5	+0.9055	0.5547	-0.0199	+64	+12
λ Sagittarii	2.9	2.16	3.8	25 27.9	07 28.2	+11 21.8	-0.4226	0.5547	0.0197	-6	-70
69 G. Sagittarii	6.3	2.19	4.1	26 48.2	07 30.5	+11 24.1	+1.0360	0.5548	0.0196	+64	+23
86 B. Sagittarii	6.5	2.19	4.0	26 37.8	07 53.0	+11 45.8	+0.8409	0.5549	0.0187	+64	+8
126 B. Sagittarii	5.7	2.25	2.7	25 05.1	14 54.1	-5 27.9	-0.9127	0.5570	0.0018	-35	-90
ϕ Sagittarii	3.3	+2.29	-3.2	-27 04.0	15 14.1	-5 08.6	+1.2411	0.5571	-0.0010	+63	+48
σ Sagittarii	2.1	2.32	2.5	26 23.3	19 27.5	-1 04.1	+0.5201	0.5581	+0.0094	+47	-12
162 B. Sagittarii	6.4	2.31	1.9	24 58.5	20 49.5	+0 14.9	-0.9985	0.5584	0.0126	-40	-90
127 G. Sagittarii	6.4	2.32	1.7	25 02.6	21 43.7	+1 07.3	-0.9107	0.5586	0.0149	-33	-90
172 B. Sagittarii	5.8	2.33	1.7	24 56.9	22 37.7	+1 59.3	-1.0002	0.5588	0.0171	-39	-90
189 B. Sagittarii	6.1	+2.35	-1.2	-24 46.3	27 01 09.1	+4 25.3	-1.1393	0.5593	+0.0233	-50	-90

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declination.	Greenwich Mean Time.	Hour Angle, <i>H</i>	<i>Y</i>	<i>z'</i>	<i>y'</i>	<i>N.</i>	<i>S.</i>
		$\Delta\alpha$	$\Delta\delta$								
201 B. Sagittarii	5.9	+2.40	-1.3	-26 01.8	27 03 18.4	+ 6 30.0	+0.2784	0.5597	+0.0286	+33	-26
ψ Sagittarii	4.8	2.40	1.0	25 23.0	04 19.2	+ 7 28.6	-0.3909	0.5598	0.0311	- 3	-67
χ Sagittarii	4.9	2.42	-0.2	24 39.0	08 34.0	+11 34.3	-1.0270	0.5604	0.0415	-39	-80
51 Sagittarii	5.8	2.47	+0.5	24 52.7	13 14.2	- 7 55.4	-0.5589	0.5608	0.0530	-10	-81
η Sagittarii	4.7	2.48	0.4	25 02.6	13 31.6	- 7 38.7	-0.5644	0.5608	0.0537	0	-65
308 B. Sagittarii	6.3	+2.52	+1.5	-24 07.3	21 10.9	- 0 15.7	-0.8709	0.5612	+0.0724	-26	-90
36 B. Capricorni	6.2	2.59	4.4	22 37.8	28 12 30.9	- 9 28.4	-1.0651	0.5602	0.1089	-36	-90
56 B. Capricorni	6.3	2.67	5.1	24 02.2	17 08.7	- 5 00.6	+0.9599	0.5596	0.1195	+66	+15
17 Capricorni	5.8	2.62	5.6	21 46.5	19 48.0	- 2 26.8	-1.1160	0.5591	0.1255	-38	-90
ζ Capricorni	5.3	2.65	7.1	21 28.9	29 05 39.1	+ 7 03.3	-0.0801	0.5572	0.1470	+25	-46
27 Capricorni	6.1	+2.65	+7.2	-20 50.7	06 05.5	+ 7 28.8	-0.6882	0.5571	+0.1479	- 7	-90
ϕ Capricorni	5.3	2.65	7.6	20 57.0	08 47.0	+10 04.6	-0.1712	0.5564	0.1534	+20	-52
33 Capricorni	5.3	2.66	8.1	21 09.4	12 33.9	-10 16.3	+0.6418	0.5555	0.1613	+67	- 6
35 Capricorni	6.0	2.67	8.3	21 30.4	13 56.1	- 8 57.0	+1.2329	0.5551	0.1640	+69	+39
128 B. Capricorni	6.5	2.64	8.7	19 27.6	15 10.4	- 7 45.3	-0.7143	0.5548	0.1665	- 6	-90
37 Capricorni	5.7	+2.66	+9.0	-20 24.2	17 20.1	- 5 40.2	+0.6413	0.5542	+0.1707	+68	- 6
ϵ Capricorni	4.7	2.65	9.1	19 47.2	18 20.0	- 4 42.3	+0.1651	0.5540	0.1726	+40	-33
κ Capricorni	4.8	2.65	9.5	19 11.6	20 49.8	- 2 17.7	-0.0214	0.5533	0.1774	+31	-43
143 B. Capricorni	6.1	2.66	9.5	19 56.9	21 04.8	- 2 03.0	+0.8149	0.5532	0.1778	+71	+ 4
154 B. Capricorni	6.1	2.65	10.0	18 57.4	30 00 53.4	+ 1 37.5	+0.4664	0.5521	0.1848	+60	-17
161 B. Capricorni	6.4	+2.64	+10.7	-18 14.8	05 37.9	+ 6 12.2	+0.6208	0.5508	+0.1932	+69	- 8
29 Aquarii(mean)	6.5	2.62	10.8	17 18.5	05 45.2	+ 6 19.3	-0.3147	0.5507	0.1934	+16	-62
56 Aquarii	6.1	2.58	12.5	14 57.0	18 26.8	- 5 24.9	-0.1995	0.5470	0.2137	+26	-53
69 Aquarii	5.6	2.56	13.4	14 26.0	31 02 28.1	+ 2 20.3	+1.0221	0.5449	0.2248	+76	+16
τ Aquarii	4.4	2.55	13.4	13 58.2	03 20.5	+ 3 10.9	+0.7393	0.5446	0.2259	+77	- 2
74 Aquarii	5.8	+2.53	+13.6	-11 59.8	05 08.8	+ 4 55.6	-0.8889	0.5442	+0.2282	- 9	-90
257 B. Aquarii	6.3	2.53	14.0	13 27.2	07 58.7	+ 7 39.9	+1.2650	0.5434	0.2316	+77	+37
290 B. Aquarii	6.3	2.49	14.5	11 04.6	15 00.4	- 9 32.4	+0.4708	0.5418	0.2394	+67	-17
ψ^1 Aquarii	4.5	2.49	14.5	9 28.6	15 34.0	- 8 59.9	-1.0398	0.5417	0.2400	-18	-90
ψ^2 Aquarii	4.6	2.47	14.6	9 34.3	16 31.2	- 8 04.6	-0.7121	0.5415	0.2409	+ 2	-90
ψ^3 Aquarii	5.2	+2.48	+14.7	-10 00.0	17 00.7	- 7 36.1	-0.1524	0.5414	+0.2414	+32	-50
336 B. Aquarii	6.3	+2.45	+15.1	- 9 39.5	21 43.4	- 3 02.5	+0.6435	0.5405	+0.2458	+79	- 8

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351 B. Aquarii	6.5	+2.43	+15.1	- 7 51.5	1 00 47.2	- 0 05.0	-0.4441	0.5400	+0.2484	+18	-69
376 B. Aquarii	6.3	2.40	15.5	6 46.6	06 54.5	+ 5 50.3	-0.0168	0.5392	0.2530	+40	-44
30 Piscium	4.7	2.37	15.8	6 24.6	13 14.1	+11 57.6	+1.2208	0.5385	0.2567	+84	+29
33 Piscium	4.8	2.36	15.9	6 06.4	14 49.9	-10 29.8	+1.3207	0.5384	0.2576	+84	+39
54 B. Ceti	6.3	2.29	15.9	2 36.8	23 52.7	- 1 44.7	+0.1085	0.5381	0.2610	+48	-37
14 Ceti	5.4	+2.26	+15.8	- 0 53.8	2 05 05.2	+ 3 17.7	-0.2734	0.5383	+0.2622	+28	-58
26 Ceti	6.0	2.18	15.9	+ 0 59.1	18 23.2	- 7 50.3	+1.3067	0.5396	0.2621	+90	+38
33 Ceti	6.1	2.15	15.8	2 04.0	21 32.7	- 4 47.1	+1.0375	0.5401	0.2615	+90	+15
f Piscium	5.3	2.13	15.6	3 14.4	3 00 55.4	- 1 31.0	+0.7321	0.5408	0.2605	+90	- 4
μ Piscium	5.0	2.11	15.0	5 46.7	06 39.7	+ 4 01.9	-0.3462	0.5422	0.2583	+25	-60
ξ Arietis	5.5	+1.92	+13.6	+10 17.3	4 07 34.5	+ 4 06.2	+1.3253	0.5512	+0.2391	+83	+47
31 Arietis	5.7	1.89	12.9	12 08.4	12 49.1	+ 9 10.0	+0.6939	0.5535	0.2331	+90	- 2
JUPITER	-2.3	.	.	13 37.0	13 13.3	+ 9 33.4	-0.7008	0.5547	0.2331	+ 5	-77
σ Arietis	5.4	1.84	11.9	14 47.4	19 21.6	- 8 31.2	-0.4800	0.5568	0.2246	+17	-64
145 B. Arietis	6.5	1.79	11.4	15 34.8	5 01 06.0	- 2 59.1	-0.0119	0.5598	0.2162	+42	-36
175 B. Arietis	6.4	+1.72	+10.1	+18 30.5	10 40.6	+ 6 14.8	-0.9699	0.5651	+0.2005	-12	-72

ELEMENTS OF OCCULTATIONS, 1928

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
26 B. Tauri	6.4	+1.68	+10.0	+17 36.0	5 13 41.2	+ 9 08.7	+0.5420	0.5668	+0.1951	+78	- 5
13 Tauri	5.6	1.66	9.4	19 28.4	17 06.8	-11 33.2	-0.6916	0.5687	0.1886	+ 5	-70
14 Tauri	6.2	1.66	9.4	19 26.5	17 43.6	-10 57.7	-0.5438	0.5690	0.1874	+13	-63
192 B. Tauri	6.1	1.55	7.7	22 13.9	6 05 44.2	+ 0 35.8	-1.2596	0.5758	0.1625	-42	-68
ω Tauri	4.8	1.51	8.2	20 24.3	07 33.6	+ 2 21.0	+0.8800	0.5767	0.1584	+90	+18
51 Tauri	5.6	1.52	+ 7.9	+21 24.4	08 00.2	+ 2 46.7	-0.0630	0.5770	+0.1574	+39	-32
53 Tauri	5.3	1.51	8.0	20 58.3	08 26.3	+ 3 11.8	+0.4452	0.5772	0.1564	+71	- 6
56 Tauri	5.2	1.52	7.8	21 36.2	08 30.1	+ 3 15.4	-0.1832	0.5772	0.1563	+33	-38
224 B. Tauri	6.1	1.49	8.1	20 39.3	09 38.4	+ 4 21.1	+0.9521	0.5778	0.1537	+90	+23
227 B. Tauri	5.9	1.49	8.0	20 49.1	10 06.5	+ 4 48.2	+0.8592	0.5781	0.1526	+90	+17
κ Tauri	4.1	+1.50	+ 7.4	+22 08.0	10 49.9	+ 5 29.9	-0.3610	0.5785	+0.1509	+23	-48
67 Tauri	5.4	1.50	7.5	22 02.3	10 51.2	+ 5 31.1	-0.2628	0.5785	0.1509	+28	-43
ν Tauri	4.2	1.50	7.2	22 39.2	11 12.4	+ 5 51.5	-0.8318	0.5786	0.1501	- 4	-68
72 Tauri	5.4	1.49	7.2	22 50.3	11 36.4	+ 6 14.6	-0.9580	0.5789	0.1491	-13	-68
247 B. Tauri	5.8	1.48	7.6	21 27.7	11 54.7	+ 6 32.2	+0.4787	0.5790	0.1484	+74	- 3
284 B. Tauri	6.0	+1.46	+ 6.8	+23 11.8	15 18.6	+ 9 48.2	-0.7857	0.5808	+0.1403	- 2	-67
τ Tauri	4.3	1.42	6.8	22 49.3	17 37.8	-11 57.9	-0.0878	0.5819	0.1346	+38	-31
95 Tauri	6.2	1.43	6.4	23 57.3	18 00.6	-11 36.0	-1.1845	0.5821	0.1337	-34	-67
300 B. Tauri	6.2	1.41	6.5	23 30.0	19 00.4	-10 38.6	-0.5905	0.5825	0.1312	+10	-60
315 B. Tauri	6.3	1.37	5.8	24 28.8	23 12.1	- 6 36.7	-1.0562	0.5845	0.1206	-22	-66
99 Tauri	6.0	+1.36	+ 6.0	+23 50.3	23 49.5	- 6 00.8	-0.3320	0.5847	+0.1190	+24	-44
103 Tauri	5.5	1.31	5.7	24 10.4	7 03 53.8	- 2 06.0	-0.2076	0.5864	0.1084	+31	-35
118 Tauri	5.4	1.22	4.8	25 05.7	12 11.8	+ 5 52.2	-0.3369	0.5894	0.0858	+24	-40
121 Tauri	5.1	1.18	5.0	23 59.7	14 37.3	+ 8 11.9	+0.9810	0.5901	0.0791	+90	+32
125 Tauri	5.1	1.18	4.3	25 51.6	16 16.0	+ 9 46.7	-0.7873	0.5905	0.0745	- 3	-65
132 Tauri	5.0	+1.12	+ 4.5	+24 32.8	19 53.6	-10 44.4	+0.7992	0.5915	+0.0642	+90	+22
139 Tauri	4.7	1.10	3.8	25 56.9	23 21.6	- 7 24.8	-0.4210	0.5920	0.0542	+19	-43
ϵ Geminorum	3.2	0.88	3.0	25 12.3	8 17 08.7	+ 9 39.2	+0.8416	0.5927	+0.0023	+90	+30
37 Geminorum	5.7	0.82	2.6	25 28.1	21 33.3	-10 06.9	+0.5549	0.5922	-0.0106	+82	+13
39 Geminorum	6.2	0.81	2.4	26 10.7	22 54.1	- 8 49.3	-0.1879	0.5920	0.0146	+32	-26
40 Geminorum	6.3	+0.81	+ 2.4	+26 00.8	23 09.6	- 8 34.4	-0.0243	0.5919	-0.0153	+41	-17
47 Geminorum	5.6	0.76	1.8	26 58.6	9 03 47.4	- 4 07.7	-1.1123	0.5909	0.0288	-29	-64
52 Geminorum	6.1	0.74	2.3	25 00.7	05 06.4	- 2 51.9	+0.8592	0.5905	0.0325	+90	+29
134 B. Geminorum	6.5	0.74	1.7	26 49.3	06 00.3	- 2 00.1	-1.0242	0.5903	0.0351	-21	-64
δ Geminorum	5.1	0.70	2.2	25 11.5	08 32.5	+ 0 26.0	+0.5479	0.5896	0.0424	+81	+10
176 B. Geminorum	6.3	+0.64	+ 2.0	+24 31.4	14 21.5	+ 6 01.2	+0.9399	0.5875	-0.0587	+90	+31
181 B. Geminorum	6.0	0.63	2.1	24 23.2	14 44.3	+ 6 23.0	+1.0569	0.5873	0.0598	+90	+39
ϵ Geminorum	5.5	0.62	1.5	25 57.4	16 39.9	+ 8 14.1	-0.6758	0.5866	0.0652	+ 4	-61
κ Geminorum	3.6	0.61	1.9	24 34.4	16 48.9	+ 8 22.8	+0.7370	0.5865	0.0656	+90	+19
ω Cancri	6.1	0.55	1.4	25 35.5	23 22.3	- 9 19.3	-0.7996	0.5834	0.0833	- 4	-65
5 B. Cancri	6.4	+0.54	+ 1.8	+23 47.0	23 25.7	- 9 16.0	+1.0577	0.5834	-0.0835	+90	+38
γ Cancri	6.2	0.54	1.4	25 17.4	23 41.8	- 9 00.4	-0.5158	0.5833	0.0842	+14	-51
η Cancri	5.9	0.51	0.9	25 43.6	10 03 12.3	- 5 38.2	-1.2793	0.5814	0.0934	-55	-64
35 B. Cancri	6.4	0.48	1.7	23 21.4	04 32.5	- 4 21.1	+1.0374	0.5807	0.0968	+90	+35
λ Cancri	5.9	0.46	1.4	24 15.0	07 18.6	- 1 41.5	-0.1625	0.5791	0.1039	+34	-32
28 Cancri	6.1	+0.44	+ 1.2	+24 23.1	10 36.5	+ 1 28.9	-0.6581	0.5772	-0.1121	+ 6	-63
ν^1 Cancri	5.7	0.42	1.2	24 19.5	11 48.0	+ 2 37.7	-0.7318	0.5764	0.1150	+ 1	-66
ν^2 Cancri	6.4	0.42	1.1	24 19.9	12 24.9	+ 3 13.2	-0.8090	0.5761	0.1165	- 4	-66
ξ Cancri	5.2	0.30	1.1	22 20.3	11 03 40.8	- 6 04.7	-0.7970	0.5658	0.1510	- 2	-68
79 Cancri	6.1	0.29	1.1	22 17.4	04 06.2	- 5 40.2	-0.8112	0.5655	0.1519	- 3	-68
90 H ¹ Cancri	6.1	+0.28	+ 1.2	+21 34.9	05 30.8	- 4 18.7	-0.2917	0.5644	-0.1548	+27	-44

ELEMENTS OF OCCULTATIONS, 1928.

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SEPTEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
57 B. Leonis	6.5	+0.19	+ 1.2	+19 11.7	11 19 02.2	+ 8 43.9	-0.0808	0.5545	-0.1805	+38	-36
NEW MOON.											
65 Virginis	6.0	+0.13	- 1.9	- 4 32.9	16 08 45.0	- 4 54.4	-0.1603	0.5039	-0.2427	+34	-52
66 Virginis	5.7	0.14	2.0	4 47.3	09 24.4	- 4 16.1	-0.0587	0.5039	0.2425	+39	-46
72 Virginis	6.1	+0.14	- 2.2	- 6 06.0	12 33.8	- 1 12.0	+0.6059	0.5038	-0.2410	+80	-11
1 Virginis	4.8	0.14	2.2	5 53.1	13 23.8	- 0 23.4	+0.1715	0.5037	0.2406	+51	-34
80 Virginis	5.6	0.16	2.0	5 01.8	15 18.6	+ 1 28.1	-1.2194	0.5037	0.2396	-31	-90
88 Virginis	6.5	0.19	2.5	6 28.8	22 10.1	+ 8 08.0	-1.2709	0.5039	0.2356	-36	-90
598 B. Virginis	6.2	0.20	2.8	7 42.4	17 01 44.7	+11 36.5	-0.7696	0.5042	0.2333	0	-90
623 B. Virginis	6.5	+0.24	- 3.1	- 8 54.8	06 45.5	- 7 31.2	-0.6100	0.5047	-0.2297	+ 8	-83
95 Virginis	5.4	0.24	3.2	8 58.3	08 01.2	- 6 17.7	-0.8357	0.5048	0.2287	- 5	-90
96 Virginis	6.5	0.26	3.4	9 59.7	09 14.0	- 5 07.0	+0.0095	0.5050	0.2278	+40	-42
κ Virginis	4.4	0.27	3.4	9 56.4	11 18.4	- 3 06.1	-0.5213	0.5053	0.2261	+12	-75
2 Libræ	6.3	0.30	3.9	11 23.2	16 54.0	+ 2 19.8	-0.1846	0.5062	0.2212	+30	-53
4 G. Libræ	6.5	+0.31	- 3.9	-11 20.7	17 34.1	+ 2 58.9	-0.3792	0.5064	-0.2207	+20	-65
6 B. Libræ	6.2	0.32	3.8	12 00.1	18 00 06.7	+ 9 20.2	-1.0824	0.5078	0.2144	-22	-90
μ Libræ	5.4	0.41	4.7	13 51.1	06 32.0	- 8 25.6	-0.4009	0.5094	0.2076	+16	-67
ν Libræ	5.3	0.49	5.3	15 58.8	15 31.3	+ 0 17.9	+0.1266	0.5121	0.1972	+42	-36
22 Libræ	6.5	0.49	5.4	16 12.5	15 37.2	+ 0 23.7	+0.3590	0.5121	0.1971	+55	-24
26 Libræ	6.3	+0.53	- 5.8	-17 30.1	19 36.0	+ 4 15.4	+1.0136	0.5135	-0.1921	+73	+15
28 Libræ	6.2	0.56	5.9	17 54.0	22 50.8	+ 7 24.5	+0.8364	0.5146	0.1879	+73	+3
41 Libræ	5.3	0.66	6.2	19 04.0	19 07 59.6	- 7 43.2	+0.4669	0.5181	0.1751	+59	-18
κ Libræ	5.0	0.67	6.4	19 26.9	09 31.6	- 6 14.0	+0.6217	0.5187	0.1729	+67	- 9
λ Libræ	4.9	0.74	6.4	19 57.3	15 13.8	- 0 42.3	+0.2212	0.5210	0.1643	+44	-31
47 Libræ	5.8	+0.75	- 6.2	-19 10.4	16 04.5	+ 0 06.8	-0.7825	0.5214	-0.1629	-10	-90
10 G. Scorpii	5.9	0.76	6.6	20 46.6	17 23.0	+ 1 22.9	+0.7812	0.5219	0.1609	+70	+ 1
β ¹ Scorpii	2.9	0.81	6.2	19 36.7	21 14.7	+ 5 07.5	-1.1189	0.5236	0.1547	-34	-90
β ² Scorpii	5.0	0.81	6.2	19 36.4	21 15.0	+ 5 07.7	-1.1238	0.5236	0.1547	-35	-90
ω ¹ Scorpii	4.3	0.82	6.5	20 28.6	21 54.6	+ 5 46.2	-0.2626	0.5238	0.1536	+16	-59
ω ² Scorpii	4.6	+0.82	- 6.6	-20 40.7	22 12.1	+ 6 03.1	-0.0857	0.5240	-0.1531	+26	-48
84 B. Scorpii	6.3	0.86	6.6	20 55.7	20 01 40.8	+ 9 25.3	-0.3313	0.5255	0.1473	+13	-63
51 G. Scorpii	6.5	0.88	6.6	21 07.7	02 54.1	+10 36.4	-0.2882	0.5260	0.1452	+14	-60
ω Ophiuchi	4.5	0.97	6.4	21 18.9	10 16.1	- 6 15.6	-1.1026	0.5293	0.1322	-35	-60
24 Ophiuchi	5.5	1.13	6.6	23 02.4	22 02.6	+ 5 08.2	-0.6216	0.5346	0.1100	- 6	-88
26 Ophiuchi	5.8	+1.17	- 7.2	-24 53.0	23 36.0	+ 6 38.6	+1.2476	0.5353	-0.1069	+66	+44
137 B. Ophiuchi	6.3	1.25	7.0	25 10.2	21 05 16.6	-11 51.8	+0.9896	0.5377	0.0955	+65	+17
39 Ophiuchi	5.1	1.27	6.4	24 12.7	07 59.4	- 9 14.4	-0.3203	0.5389	0.0899	+ 6	-63
θ Ophiuchi	3.3	1.30	6.6	24 55.9	09 50.3	- 7 27.2	+0.3116	0.5397	0.0860	+40	-25
191 B. Ophiuchi	6.3	1.32	6.2	24 10.9	11 17.1	- 6 03.2	-0.6388	0.5402	0.0830	-10	-90
44 Ophiuchi	4.1	+1.33	- 6.3	-24 06.8	11 52.4	- 5 29.1	-0.7627	0.5405	-0.0817	-17	-90
136 G. Ophiuchi	6.3	1.34	6.8	25 53.0	12 06.2	- 5 15.8	+1.1726	0.5405	0.0812	+65	+34
51 Ophiuchi	4.8	1.36	6.0	23 54.6	14 12.6	- 3 13.6	-1.1707	0.5414	0.0767	-47	-90
63 Ophiuchi	6.1	1.51	5.6	24 52.6	22 00 57.4	+ 7 09.5	-0.8028	0.5456	0.0531	-23	-90
66 B. Sagittarii	4.7	1.69	5.5	27 04.3	11 23.1	- 6 46.2	+1.1794	0.5490	0.0292	+63	+37
67 B. Sagittarii	6.4	+1.67	- 5.0	-25 38.1	11 41.7	- 6 28.3	-0.4060	0.5491	-0.0285	- 4	-69
70 B. Sagittarii	6.4	1.68	4.6	24 57.0	12 58.6	- 5 14.0	-1.1911	0.5494	0.0255	-54	-89
68 G. Sagittarii	6.2	1.75	5.0	26 40.8	15 43.8	- 2 34.5	+0.6444	0.5502	0.0190	+56	- 6
λ Sagittarii	2.9	1.73	4.6	25 27.9	15 51.5	- 2 27.1	-0.6903	0.5502	0.0187	-20	-90
69 G. Sagittarii	6.3	1.75	5.0	26 48.2	15 53.8	- 2 24.8	+0.7758	0.5503	0.0186	+64	+ 2
86 B. Sagittarii	6.5	+1.75	- 4.9	-26 37.8	16 16.6	- 2 02.8	+0.5799	0.5504	-0.0177	+51	-10

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ELEMENTS OF OCCULTATIONS, 1928.

SEPTEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0		Apparent Declina- tion	Greenwich Mean Time.	Hour Angle, H	Y	x'	y	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
126 B. Sagittarii	5.7	+1.83	-3.6	-25 05.2	22 23 22.6	+ 4 48.4	-1.1761	0.5522	-0.0009	-54	-90
" Sagittarii	3.3	1.86	4.3	27 04.1	23 42.8	+ 5 08.0	+0.9892	0.5522	-0.0001	+63	+11
" Sagittarii	2.1	1.91	3.6	26 23.3	23 03 59.4	+ 9 15.7	+0.2688	0.5531	+0.0102	+30	-27
162 B. Sagittarii	6.4	1.91	2.9	24 58.5	05 22.4	+10 35.7	-1.2564	0.5534	0.0135	-61	-75
127 G. Sagittarii	6.4	1.92	2.8	25 02.7	06 17.2	+11 28.6	-1.1671	0.5535	0.0157	-52	-90
172 B. Sagittarii	5.8	+1.93	-2.8	-24 56.9	07 11.9	-11 38.6	-1.2562	0.5537	+0.0179	-61	-76
201 B. Sagittarii	5.9	2.01	2.5	26 01.8	11 56.2	- 7 04.2	+0.0344	0.5544	0.0294	+19	-41
" Sagittarii	4.8	2.02	2.2	25 23.0	12 57.9	- 6 04.8	-0.6372	0.5545	0.0319	-16	-00
" Sagittarii	4.9	2.05	1.5	24 39.0	17 15.9	- 1 55.8	-1.2715	0.5550	0.0423	-63	-71
51 Sagittarii	5.8	2.12	1.0	24 52.7	21 59.8	+ 2 38.1	-0.7951	0.5554	0.0537	-22	-90
h Sagittarii	4.7	+2.13	-1.0	-25 02.7	22 17.4	+ 2 55.2	-0.5993	0.5554	+0.0544	-11	-87
308 B. Sagittarii	6.3	2.20	0.0	24 07.3	24 06 02.9	+10 24.2	-1.0979	0.5557	0.0731	-42	-90
36 B. Capricorni	6.2	2.34	+2.8	22 37.8	21 34.6	+ 1 23.1	-1.2691	0.5550	0.1095	-57	-78
56 B. Capricorni	6.3	2.44	3.3	24 02.2	25 02 15.6	+ 5 54.3	+0.7717	0.5545	0.1202	+66	+ 1
" Capricorni	5.3	2.48	5.4	21 28.9	14 54.1	- 5 53.7	-0.2498	0.5526	0.1477	+16	-58
27 Capricorni	6.1	+2.48	+5.6	-20 50.7	15 20.8	- 5 27.9	-0.8587	0.5526	+0.1487	-17	-90
" Capricorni	5.3	2.50	6.0	20 57.0	18 03.8	- 2 50.5	-0.3351	0.5522	0.1543	+13	-63
33 Capricorni	5.3	2.53	6.4	21 09.4	21 52.7	+ 0 50.5	+0.4870	0.5515	0.1622	+57	-16
35 Capricorni	6.0	2.54	6.6	21 30.4	23 15.6	+ 2 10.5	+1.0818	0.5512	0.1649	+69	+22
125 B. Capricorni	6.5	2.52	7.3	19 27.6	26 00 30.5	+ 3 22.8	-0.8664	0.5510	0.1674	-15	-90
37 Capricorni	5.7	+2.55	+7.4	-20 24.3	02 41.2	+ 5 28.9	+0.4958	0.5506	+0.1717	+59	-16
" Capricorni	4.7	2.55	7.6	19 47.2	03 41.5	+ 6 27.2	+0.0210	0.5504	0.1736	+33	-42
" Capricorni	4.8	2.56	8.1	19 11.6	06 12.3	+ 8 52.8	-0.1605	0.5498	0.1784	+24	-52
143 B. Capricorni	6.1	2.58	7.9	19 56.9	06 27.4	+ 9 07.5	+0.6771	0.5498	0.1789	+69	- 6
154 B. Capricorni	6.1	2.58	8.6	18 57.4	10 17.3	-11 10.5	+0.3361	0.5490	0.1860	+51	-25
161 B. Capricorni	6.4	+2.60	+9.4	-18 14.9	15 03.3	- 6 34.3	+0.5008	0.5481	+0.1946	+62	-16
29 Aquarii (mean)	6.5	2.58	9.7	17 18.6	15 10.6	- 6 27.2	-0.4544	0.5480	0.1948	+11	-71
56 Aquarii	6.1	2.61	11.6	14 57.1	27 03 54.0	+ 5 50.2	-0.2893	0.5456	0.2155	+22	-60
69 Aquarii	5.6	2.64	12.6	14 26.0	11 54.8	-10 25.0	+0.9483	0.5442	0.2271	+76	+ 9
" Aquarii	4.4	2.63	12.7	13 58.2	12 47.0	- 9 34.6	+0.6684	0.5442	0.2282	+76	- 7
74 Aquarii	5.8	+2.61	+13.3	-11 59.8	14 35.0	- 7 50.1	-0.9500	0.5438	+0.2306	-13	-90
257 B. Aquarii	6.3	2.64	13.4	13 27.2	17 24.3	- 5 06.5	+1.2032	0.5435	0.2342	+77	+20
290 B. Aquarii	6.3	2.63	14.3	11 04.6	28 00 23.9	+ 1 39.1	+0.4296	0.5426	0.2424	+64	-20
" Aquarii	4.5	2.63	14.6	9 28.6	00 57.3	+ 2 11.4	-1.0721	0.5426	0.2430	-20	-90
" Aquarii	4.6	2.62	14.6	9 34.3	01 54.0	+ 3 06.2	-0.7435	0.5425	0.2440	0	-90
" Aquarii	5.2	+2.62	+14.6	-10 00.0	02 23.4	+ 3 34.6	-0.1853	0.5424	+0.2445	+30	-53
336 B. Aquarii	6.3	2.63	15.1	9 39.5	07 03.9	+ 8 05.9	+0.6185	0.5421	0.2492	+77	-10
351 B. Aquarii	6.5	2.61	15.5	7 51.5	10 05.9	+11 01.8	-0.4546	0.5419	0.2519	+17	-70
376 B. Aquarii	6.3	2.62	16.0	6 46.6	16 09.2	- 7 06.9	-0.0140	0.5417	0.2568	+40	-44
30 Piscium	4.7	2.62	16.5	6 24.6	22 24.0	- 1 04.5	+1.2303	0.5418	0.2610	+84	+29
33 Piscium	4.8	+2.62	+16.6	- 6 06.3	23 58.4	+ 0 26.7	+1.3333	0.5418	+0.2619	+83	+41
54 B. Ceti	6.3	2.60	17.1	2 36.8	29 08 52.5	+ 9 03.1	+0.1546	0.5425	0.2658	+50	-35
14 Ceti	5.4	2.60	17.3	- 0 53.8	13 59.3	-10 00.3	-0.2101	0.5432	0.2672	+31	-54
26 Ceti	6.0	2.58	17.7	+ 0 59.2	30 03 00.5	+ 2 34.8	+1.3852	0.5457	0.2676	+78	+50
33 Ceti	6.1	2.57	17.7	2 04.1	06 05.6	+ 5 33.7	+1.1264	0.5466	0.2671	+90	+21
f Piscium	5.3	+2.56	+17.6	3 14.4	09 23.5	+ 8 44.9	+0.8323	0.5475	+0.2662	+90	+ 2
" Piscium	5.0	+2.57	+17.4	+ 5 46.7	14 59.2	- 9 50.8	-0.2198	0.5493	+0.2640	+31	-54

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JUPITER	-2.4	+13 01.6	1 17 57.3	- 7 49.2	-0.5806	0.5650	+0.2429	+12	-72
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OCTOBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	α'	γ'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
31 Arietis	5.7	+2.51	+15.8	+12 08.4	1 20 18.5	- 5 33.0	+0.8670	0.5620	+0.2384	+90	+ 8
o Arietis	5.8	2.50	15.1	15 00.7	23 41.7	- 2 17.1	-1.1904	0.5637	0.2339	-28	-75
σ Arietis	5.4	2.49	14.9	14 47.4	2 02 39.5	+ 0 34.2	-0.2829	0.5653	0.2297	+28	-52
145 B. Arietis	6.5	2.46	14.3	15 34.9	08 13.9	+ 5 56.4	+0.1869	0.5683	0.2211	+53	-26
175 B. Arietis	6.4	2.45	13.0	18 30.5	17 31.9	- 9 06.4	-0.7471	0.5734	0.2048	+ 2	-72
26 B. Tauri	6.4	+2.42	+12.7	+17 36.1	20 27.5	- 6 17.4	+0.7486	0.5750	+0.1992	+90	+ 6
13 Tauri	5.6	2.42	12.2	19 28.4	23 47.4	- 3 05.1	-0.4661	0.5767	0.1925	+17	-58
14 Tauri	6.2	2.42	12.1	19 26.5	3 00 23.2	- 2 30.6	-0.3197	0.5771	0.1913	+25	-49
A Tauri	4.5	2.39	10.6	21 53.4	08 48.9	+ 5 35.6	-1.2270	0.5815	0.1730	-37	-69
39 Tauri	6.1	2.39	10.5	21 49.1	09 04.3	+ 5 50.5	-1.1123	0.5816	0.1724	-25	-69
192 B. Tauri	6.1	+2.36	+10.2	+22 23.9	12 04.7	+ 8 43.9	-1.0181	0.5831	+0.1655	-17	-68
ω Tauri	4.8	2.32	10.5	20 24.3	13 51.4	+10 26.4	+1.0987	0.5840	0.1613	+90	+34
51 Tauri	5.6	2.34	10.2	21 24.4	14 17.3	+10 51.2	+0.1664	0.5842	0.1602	+53	-20
53 Tauri	5.3	2.33	10.2	20 58.3	14 42.8	+11 15.8	+0.6694	0.5844	0.1592	+90	+ 6
56 Tauri	5.2	2.33	10.1	21 36.2	14 46.5	+11 19.3	+0.0479	0.5844	0.1590	+46	-26
224 B. Tauri	6.1	+2.31	+10.2	+20 39.3	15 53.1	-11 36.7	+1.1716	0.5849	+0.1564	+90	+40
227 B. Tauri	5.9	2.31	10.1	20 49.1	16 20.6	-11 10.2	+1.0800	0.5851	0.1553	+90	+32
κ Tauri	4.1	2.32	9.7	22 08.0	17 02.9	-10 29.6	-0.1266	0.5855	0.1535	+36	-35
67 Tauri	5.4	2.32	9.7	22 02.4	17 04.2	-10 28.4	- 0.2095	0.5855	0.1535	+41	-30
v Tauri	4.2	2.33	9.5	22 39.3	17 24.8	-10 08.5	-0.5921	0.5856	0.1526	+10	-62
72 Tauri	5.4	+2.32	+ 9.4	+22 50.3	17 48.2	- 9 46.1	-0.7168	0.5858	+0.1517	+ 3	-68
247 B. Tauri	5.8	2.31	9.7	21 27.8	18 06.2	- 9 28.8	+0.7048	0.5859	0.1509	+90	+ 9
284 B. Tauri	6.0	2.30	8.8	23 11.8	21 25.2	- 6 17.6	-0.5447	0.5874	0.1426	+13	-58
τ Tauri	4.3	2.27	8.7	22 49.4	23 41.3	- 4 07.0	+0.1472	0.5883	0.1367	+52	-19
95 Tauri	6.2	2.28	8.3	23 57.4	4 00 03.6	- 3 45.6	-0.9385	0.5884	0.1358	-12	-67
300 B. Tauri	6.2	+2.27	+ 8.4	+23 30.0	01 02.1	- 2 49.4	-0.3500	0.5888	+0.1332	+23	-46
315 B. Tauri	6.3	2.24	7.5	24 28.8	05 08.4	+ 1 07.0	+0.8102	0.5903	0.1223	- 4	-66
99 Tauri	6.0	2.23	7.7	23 50.4	05 45.0	+ 1 42.1	-0.0926	0.5905	0.1206	+38	-31
h Tauri	5.6	2.24	7.3	24 56.6	05 52.2	+ 1 49.1	-1.1857	0.5905	0.1203	-35	-66
103 Tauri	5.5	2.19	7.1	24 10.4	09 44.4	+ 3 31.9	+0.0319	0.5918	0.1097	+45	-23
118 Tauri	5.4	+2.12	+ 5.8	+25 05.7	17 53.4	-10 38.9	-0.0953	0.5938	+0.0867	+37	-27
121 Tauri	5.1	2.07	5.9	23 59.7	20 16.6	- 8 21.5	+1.2134	0.5942	0.0798	+87	+52
125 Tauri	5.1	2.08	5.0	25 51.6	21 53.8	- 6 48.2	-0.5425	0.5945	0.0751	+12	-52
132 Tauri	5.0	2.02	5.1	24 32.8	5 01 28.2	- 3 22.5	+1.0336	0.5948	0.0646	+90	+38
139 Tauri	4.7	2.00	4.2	25 56.9	04 53.3	- 0 05.8	-0.1792	0.5950	0.0545	+33	-29
ϵ Geminorum	3.2	+1.76	+ 2.3	+25 12.3	22 30.6	- 7 11.5	+1.0748	0.5934	+0.0018	+90	+46
37 Geminorum	5.7	1.71	1.7	25 28.1	6 02 53.8	- 2 59.0	+0.7876	0.5922	-0.0112	+90	+26
39 Geminorum	6.2	1.69	1.4	26 10.6	04 14.3	- 1 41.8	+0.0459	0.5918	0.0151	+45	-13
40 Geminorum	6.3	1.70	1.3	26 00.8	04 29.7	- 1 27.0	+0.2091	0.5917	0.0159	+56	- 6
47 Geminorum	5.6	1.65	0.4	26 58.6	09 06.7	+ 2 58.9	-0.8797	0.5901	0.0294	- 9	-64
52 Geminorum	6.1	+1.61	+ 1.0	+25 00.7	10 25.6	+ 4 14.6	+1.0889	0.5896	-0.0332	+90	+45
134 B. Geminorum	6.5	1.62	0.2	26 49.2	11 19.4	+ 5 06.3	-0.7932	0.5893	0.0358	- 4	-64
A Geminorum	5.1	1.55	0.6	25 11.4	13 51.6	+ 7 32.4	+0.7762	0.5882	0.0430	+90	+23
176 B. Geminorum	6.3	1.48	+ 0.2	24 31.4	19 40.9	-10 52.2	+1.1653	0.5854	0.0594	+90	+49
c Geminorum	5.5	1.46	- 0.5	25 57.4	21 59.7	- 8 38.9	-0.4526	0.5842	0.0658	+17	-46
κ Geminorum	3.6	+1.44	- 0.1	+24 34.3	22 08.7	- 8 30.1	+0.9610	0.5841	-0.0662	+90	+23
ω Cancri	6.1	1.36	1.0	25 35.5	7 04 43.8	- 2 10.4	-0.5822	0.5803	0.0839	+10	-56
5 B. Cancri	6.4	1.34	0.4	23 46.9	04 47.1	- 2 07.2	+1.2780	0.5803	0.0841	+71	+61
4 Cancri	6.2	1.35	0.9	25 17.3	05 03.4	- 1 51.6	-0.2983	0.5802	0.0848	+26	-38
η Cancri	5.9	1.31	1.7	25 43.6	08 35.1	+ 1 32.0	-1.0665	0.5780	0.0939	-23	-65
35 B. Cancri	6.4	+1.27	- 0.7	+23 21.3	09 55.0	+ 2 49.6	+1.2541	0.5771	-0.0974	+81	+55

ELEMENTS OF OCCULTATIONS, 1928.

OCTOBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallel.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declination.	Greenwich Mean Time.	Hour Angle, <i>H</i>	<i>Y</i>	<i>x'</i>	<i>y'</i>	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
λ Cancr	5.9	+1.24	-1.3	+24 15.0	7 12 43.1	+ 5 30.5	+0.0490	0.5752	-0.1043	+46	-21
28 Cancr	6.1	1.20	1.6	24 23.1	16 02.7	+ 8 42.5	-0.4514	0.5730	0.1125	+18	-50
1 ¹ Cancr	5.7	1.18	1.7	24 19.5	17 14.9	+ 9 52.0	-0.5265	0.5721	0.1154	+13	-55
1 ² Cancr	6.4	1.17	1.8	24 19.8	17 52.0	+10 27.7	-0.6046	0.5717	0.1169	+ 9	-60
5 Cancr	5.2	0.97	2.2	22 20.2	8 09 18.3	+ 1 20.1	-0.6110	0.5604	0.1511	+ 9	-63
79 Cancr	6.1	+0.97	-2.2	+22 17.3	09 44.0	+ 1 44.9	-0.6259	0.5600	-0.1520	+ 8	-64
90 H ¹ Cancr	6.1	0.94	2.1	21 34.8	11 09.8	+ 3 07.6	-0.1057	0.5590	0.1549	+37	-35
57 B. Leonis	6.5	0.78	2.3	19 11.7	9 00 53.2	- 7 37.8	+0.0872	0.5485	0.1803	+48	-28
1 ¹ Leonis	3.6	0.66	2.2	17 06.8	11 23.0	+ 2 30.9	+0.2955	0.5407	0.1968	+60	-19
42 Leonis	6.1	0.59	2.1	15 20.3	18 13.0	+ 9 07.4	+0.7928	0.5360	0.2063	+90	+ 6
46 Leonis	5.8	+0.55	-2.1	+14 30.4	23 10.0	-10 05.2	+0.6371	0.5326	-0.2125	+86	- 7
h Leonis	5.5	0.49	2.5	14 34.5	10 06 04.0	- 3 24.2	-0.9287	0.5281	0.2203	- 8	-76
l Leonis	4.1	0.37	2.4	10 55.5	11 00 48.1	- 9 14.7	-1.3390	0.5177	0.2305	-43	-79
ω Virginis	5.4	0.32	2.2	8 31.9	08 16.3	- 1 59.8	-0.5646	0.5142	0.2411	+13	-74
ν Virginis	4.2	0.29	2.2	+ 6 55.9	12 06.5	+ 1 43.6	+0.2222	0.5126	0.2430	+55	-29
NEW MOON.											
ν Libræ	5.3	+0.28	-4.6	-15 58.8	15 22 59.1	+ 9 33.4	-0.0293	0.5133	-0.1991	+34	-44
22 Libræ	6.5	0.28	4.7	16 12.5	23 04.9	+ 9 39.2	+0.2032	0.5133	0.1990	+46	-32
26 Libræ	6.3	0.30	4.9	17 30.1	16 03 03.4	-10 29.6	+0.8534	0.5147	0.1940	+73	+ 4
28 Libræ	6.2	+0.32	-5.1	-17 54.0	06 17.8	- 7 21.0	+0.6718	0.5159	-0.1897	+71	- 6
11 H. Libræ	5.4	0.36	5.4	19 25.7	12 14.6	- 1 34.9	+1.2604	0.5181	0.1815	+71	+39
41 Libræ	5.3	0.39	5.3	19 04.0	15 25.7	+ 1 30.4	+0.2906	0.5194	0.1760	+49	-27
κ Libræ	5.0	0.39	5.4	19 26.9	16 57.4	+ 2 59.4	+0.4440	0.5200	0.1746	+57	-19
λ Libræ	4.9	0.44	5.5	19 57.3	22 39.1	+ 8 30.6	+0.0366	0.5222	0.1658	+34	-41
47 Libræ	5.8	+0.44	-5.4	-19 10.4	23 29.7	+ 9 19.8	-0.9699	0.5226	-0.1645	-22	-90
10 G. Scorpil	5.9	0.45	5.7	20 46.6	17 00 48.1	+10 35.7	+0.5956	0.5231	0.1624	+64	-10
β^1 Scorpil	2.9	0.48	5.4	19 36.7	04 39.6	- 9 39.9	-1.3122	0.5247	0.1561	-56	-76
β^2 Scorpil	5.0	0.48	5.4	19 36.4	04 39.8	- 9 39.7	-1.3171	0.5247	0.1561	-57	-74
ω^1 Scorpil	4.3	0.49	5.6	20 28.6	05 19.4	- 9 01.3	-0.4548	0.5249	0.1556	+ 7	-72
ω^2 Scorpil	4.6	+0.49	-5.7	-20 40.6	05 36.8	- 8 44.4	-0.2777	0.5250	-0.1545	+16	-60
84 B. Scorpil	6.3	0.52	5.7	20 55.6	09 05.4	- 5 22.4	-0.5270	0.5265	0.1486	+ 3	-78
51 G. Scorpil	6.5	0.53	5.7	21 07.7	10 18.6	- 4 11.4	-0.4840	0.5270	0.1465	+ 5	-74
ρ Ophiuchi	4.7	0.57	6.2	23 17.0	14 28.3	- 0 09.6	+1.3136	0.5287	0.1391	+65	+57
ω Ophiuchi	4.5	0.60	5.6	21 18.9	17 40.5	+ 2 56.5	-1.3074	0.5300	0.1333	-61	-70
24 Ophiuchi	5.5	+0.73	-5.9	-23 02.4	18 05 27.6	- 9 39.1	-0.8334	0.5347	-0.1107	-19	-90
88 B. Ophiuchi	6.3	0.75	6.3	24 59.2	06 55.7	- 8 13.9	+1.1664	0.5352	0.1078	+66	+33
26 Ophiuchi	5.8	0.75	6.3	24 52.9	07 01.2	- 8 08.5	+1.0415	0.5352	0.1076	+66	+21
137 B. Ophiuchi	6.3	0.82	6.3	25 10.2	12 42.7	- 2 38.1	-0.7798	0.5374	0.0960	+65	+ 2
39 Ophiuchi	5.1	0.84	5.9	24 12.7	15 26.1	- 0 00.1	-0.5364	0.5383	0.0904	- 4	-80
0 Ophiuchi	3.3	+0.87	-6.1	-24 55.9	17 17.4	+ 1 47.4	+0.0973	0.5390	-0.0865	+28	-37
191 B. Ophiuchi	6.3	0.88	5.8	24 10.8	18 44.5	+ 3 11.8	-0.8578	0.5394	0.0834	-23	-90
44 Ophiuchi	4.1	0.88	5.8	24 06.7	19 20.0	+ 3 46.1	-0.9824	0.5397	0.0822	-31	-90
136 G. Ophiuchi	6.3	0.90	6.2	25 53.0	19 33.8	+ 3 59.4	-0.9612	0.5398	0.0817	+65	+15
151 G. Ophiuchi	6.0	0.93	6.3	26 13.1	21 47.7	+ 6 08.9	+1.1552	0.5405	0.0769	+64	+33
63 Ophiuchi	6.1	+1.05	-5.4	-24 52.6	19 08 29.4	- 7 30.8	-1.0278	0.5437	-0.0533	-37	-90
66 B. Sagittarii	4.7	1.20	5.5	27 04.3	19 00.4	+ 2 38.8	+0.9644	0.5463	0.0293	+63	+16
67 B. Sagittarii	6.4	1.19	5.1	25 38.1	19 19.2	+ 2 57.0	-0.6310	0.5463	0.0286	-16	-90
68 G. Sagittarii	6.2	1.26	5.1	26 40.8	23 23.8	+ 6 53.2	+0.4259	0.5471	0.0191	+41	-19
λ Sagittarii	2.9	1.25	4.8	25 27.9	23 31.5	+ 7 00.8	-0.9178	0.5471	0.0188	-33	-90
69 G. Sagittarii	6.3	+1.26	-5.2	-26 48.2	23 33.8	+ 7 03.0	+0.5581	0.5471	-0.0187	+50	-11

OCTOBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	α'	γ'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
86 ^b B. Sagittarii	6.5	+1.26	-5.1	-26 37.8	19 23 56.9	+7 25.2	+0.3609	0.5472	-0.0178	+36	-22
ϕ Sagittarii	3.3	1.37	4.7	27 04.1	20 07 28.4	-9 18.8	+0.7736	0.5484	-0.0001	+63	+2
σ Sagittarii	2.1	1.42	4.2	26 23.3	11 48.2	-5 07.9	+0.0481	0.5489	+0.0101	+18	-40
201 B. Sagittarii	5.9	1.52	3.3	26 01.8	19 52.0	+2 39.3	-0.1871	0.5495	0.0293	+8	-54
ψ Sagittarii	4.8	1.53	3.0	25 23.0	20 54.6	+3 39.6	-0.8642	0.5496	0.0317	-29	-90
51 Sagittarii	5.8	+1.64	-2.0	-24 52.7	21 06 05.7	-11 28.2	-1.0217	0.5496	+0.0534	-37	-90
h Sagittarii	4.7	1.65	-2.1	25 02.7	06 23.6	-11 10.9	-0.8241	0.5496	0.0542	-24	-90
56 B. Capricorni	6.3	2.03	+1.6	24 02.3	22 10 56.0	-7 37.4	+0.5732	0.5470	0.1192	+58	-11
Σ Capricorni	5.3	2.11	3.6	21 29.0	23 51.9	+4 52.0	-0.4492	0.5448	0.1465	+6	-72
27 Capricorni	6.1	2.11	3.8	20 50.7	23 00 19.2	+5 18.4	-1.0640	0.5447	0.1474	-31	-90
ϕ Capricorni	5.3	+2.13	+4.1	-20 57.0	03 06.0	+7 59.6	-0.5327	0.5442	+0.1531	+3	-78
33 Capricorni	5.3	2.18	4.4	21 09.4	07 00.4	+11 46.1	+0.3012	0.5435	0.1608	+46	-26
35 Capricorni	6.0	2.20	4.5	21 30.5	08 25.3	-10 51.9	+0.9032	0.5431	0.1635	+69	+9
128 B. Capricorni	6.5	2.18	5.4	19 27.7	09 41.9	-9 37.9	-1.0631	0.5430	0.1660	-29	-90
37 Capricorni	5.7	2.22	5.3	20 24.3	11 55.7	-7 28.5	+0.3147	0.5426	0.1702	+48	-26
ϵ Capricorni	4.7	+2.22	+5.6	-19 47.3	12 57.4	-6 29.0	-0.1617	0.5424	+0.1722	+24	-52
κ Capricorni	4.8	2.24	6.1	19 11.6	15 31.8	-3 59.8	-0.3444	0.5419	0.1760	+15	-64
143 B. Capricorni	6.1	2.26	5.9	19 56.9	15 47.3	-3 44.7	+0.5017	0.5418	0.1774	+60	-15
154 B. Capricorni	6.1	2.28	6.6	18 57.4	19 42.6	+0 02.7	+0.1616	0.5411	0.1845	+42	-34
161 B. Capricorni	6.4	2.32	7.3	18 14.9	24 00 35.1	+4 45.5	+0.3332	0.5403	0.1930	+52	-25
29 Aquarii(mean)	6.5	+2.30	+7.7	-17 18.6	00 42.6	+4 52.8	-0.6107	0.5402	+0.1932	+2	-87
56 Aquarii	6.1	2.38	9.7	14 57.1	13 42.8	-6 32.8	-0.4471	0.5383	0.2141	+14	-70
69 Aquarii	5.6	2.44	10.7	14 26.0	21 53.5	+1 21.8	+0.8116	0.5374	0.2257	+76	+1
τ Aquarii	4.4	2.44	10.9	13 58.2	22 46.7	+2 13.2	+0.5310	0.5373	0.2269	+68	-15
74 Aquarii	5.8	2.44	11.7	11 59.8	25 00 36.7	+3 59.6	-1.0959	0.5372	0.2293	-23	-90
257 B. Aquarii	6.3	+2.47	+11.6	-13 27.2	03 29.2	+6 46.4	+1.0761	0.5370	+0.2330	+77	+18
290 B. Aquarii	6.3	2.50	12.8	11 04.6	10 35.9	-10 20.9	+0.3086	0.5368	0.2414	+56	-27
ψ^1 Aquarii	4.5	2.51	13.2	9 28.6	11 09.8	-9 48.1	-1.2004	0.5368	0.2420	-30	-90
ψ^2 Aquarii	4.6	2.50	13.3	9 34.3	12 07.5	-8 52.2	-0.8683	0.5368	0.2431	-7	-90
ψ^3 Aquarii	5.2	2.50	13.2	10 00.1	12 37.3	-8 23.4	-0.3063	0.5368	0.2436	+24	-60
336 B. Aquarii	6.3	+2.53	+13.7	-9 39.5	17 22.0	-3 47.9	+0.5004	0.5368	+0.2485	+70	-16
351 B. Aquarii	6.5	2.54	14.4	7 51.5	20 26.5	-0 49.4	-0.5628	0.5370	0.2514	+12	-78
376 B. Aquarii	6.3	2.57	15.0	6 46.6	20 34.1	+5 06.1	-0.1091	0.5374	0.2567	+36	-49
30 Piscium	4.7	2.61	15.4	6 24.6	08 52.4	+11 12.1	+1.1496	0.5383	0.2612	+84	+22
33 Piscium	4.8	2.61	15.7	6 06.4	10 27.6	-11 15.9	+1.2553	0.5385	0.2622	+84	+32
24 B. Ceti	6.0	+2.62	+15.8	-5 38.6	12 47.4	-9 00.6	+1.3983	0.5389	+0.2635	+73	+53
54 B. Ceti	6.3	2.64	16.6	2 36.8	19 24.9	-2 36.3	+0.0920	0.5403	0.2667	+47	-38
14 Ceti	5.4	2.67	17.1	-0 53.8	27 00 32.6	+2 21.2	-0.2622	0.5417	0.2684	+29	-58
26 Ceti	6.0	2.73	17.7	+0 59.2	13 32.8	-9 04.8	+1.3542	0.5461	0.2698	+83	+44
33 Ceti	6.1	2.74	17.9	2 04.1	16 37.0	-6 06.8	+1.1019	0.5473	0.2695	+90	+19
f Piscium	5.3	+2.75	+18.0	+3 14.4	19 53.7	-2 56.7	+0.8151	0.5488	+0.2688	+90	+1
μ Piscium	5.0	2.80	18.2	5 46.7	28 01 26.5	+2 24.6	-0.2205	0.5514	0.2670	+31	-54
JUPITER	-2.4	.	.	11 55.5	22 25.9	-1 20.3	-0.8239	0.5688	0.2540	-2	-79
31 Arietis	5.7	2.92	17.1	12 08.5	29 06 17.1	+6 13.6	+0.9098	0.5683	0.2429	+90	+11
α Arietis	5.8	2.93	16.8	15 00.7	09 35.6	+9 24.9	-1.1181	0.5705	0.2385	-22	-75
σ Arietis	5.4	+2.94	+16.6	+14 47.4	12 29.2	-11 48.0	-0.2163	0.5724	+0.2343	+31	-48
145 B. Arietis	6.5	2.95	16.0	15 34.9	17 55.0	-6 34.5	+0.2565	0.5761	0.2258	+58	-22
175 B. Arietis	6.4	3.00	14.9	18 30.6	30 02 57.3	+2 07.0	-0.6508	0.5822	0.2095	+8	-70
26 B. Tauri	6.4	2.98	14.4	17 36.1	05 47.6	+4 50.7	+0.8278	0.5841	0.2038	+90	+11
13 Tauri	5.6	3.00	14.0	19 28.5	09 01.4	+7 56.9	-0.3648	0.5862	0.1971	+23	-53
14 Tauri	6.2	+3.01	+13.9	+19 26.6	09 36.0	+8 30.1	-0.2197	0.5866	+0.1959	+31	-44

OCTOBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	α'	γ'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
<hr/>											
A Tauri	4.5	+3.04	+12.4	+21 53.4	30 17 45.5	- 7 39.9	-1.1022	0.5917	+0.1774	-24	-60
39 Tauri	6.1	3.04	12.4	21 49.2	18 00.3	- 7 25.6	-0.9890	0.5918	0.1768	-15	-60
192 B. Tauri	6.1	3.03	12.0	22 14.0	20 54.7	- 4 38.3	-0.8926	0.5935	0.1697	- 8	-65
m Tauri	4.8	2.99	12.0	20 24.4	22 37.8	- 2 59.4	+1.1930	0.5945	0.1654	+90	+41
51 Tauri	5.6	3.02	11.8	21 24.5	23 02.8	- 2 35.4	+0.2759	0.5947	0.1643	+60	-15
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53 Tauri	5.3	+3.00	+11.8	+20 58.4	23 27.4	- 2 11.7	+0.7714	0.5949	+0.1633	+90	+12
56 Tauri	5.2	3.02	11.6	21 36.2	23 31.1	- 2 08.2	+0.1598	0.5950	0.1632	+52	-21
224 B. Tauri	6.1	2.99	11.7	20 39.3	31 00 35.4	- 1 06.5	+1.2668	0.5955	0.1604	+83	+51
227 B. Tauri	5.9	3.00	11.6	20 49.1	01 01.9	- 0 41.0	+1.1772	0.5958	0.1593	+90	+41
n Tauri	4.1	3.02	11.2	22 08.0	01 42.8	- 0 01.8	-0.0095	0.5961	0.1575	+42	-29
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67 Tauri	5.4	+3.02	+11.2	+22 02.4	01 44.0	- 0 00.7	+0.0861	0.5961	+0.1575	+48	-24
v Tauri	4.2	3.03	11.1	22 39.3	02 04.0	+ 0 18.5	-0.4672	0.5963	0.1566	+17	-55
72 Tauri	5.4	3.03	11.0	22 50.3	02 26.6	+ 0 40.2	-0.5895	0.5965	0.1556	+10	-62
247 B. Tauri	5.8	3.01	11.2	21 27.8	02 43.9	+ 0 56.7	+0.8096	0.5966	0.1548	+90	+12
284 B. Tauri	6.0	3.03	10.3	23 11.9	05 56.1	+ 4 01.1	-0.4164	0.5982	0.1463	+20	-51
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τ Tauri	4.3	+3.01	+10.1	+22 49.4	08 07.4	+ 6 06.9	+0.2666	0.5992	+0.1404	+59	-13
95 Tauri	6.2	3.03	9.8	23 57.4	08 28.9	+ 6 27.6	-0.8011	0.5994	0.1394	- 3	-67
300 B. Tauri	6.2	3.01	9.8	23 30.0	09 25.4	+ 7 21.6	-0.2212	0.5998	0.1368	+30	-36
315 B. Tauri	6.3	3.01	8.8	24 28.9	13 23.0	+11 09.5	-0.6701	0.6013	0.1256	+ 5	-64
99 Tauri	6.0	3.00	8.8	23 50.4	13 58.3	+11 43.3	+0.0364	0.6015	0.1239	+45	-24
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h Tauri	5.6	+3.02	+ 8.6	+24 56.6	14 05.2	+11 49.9	-1.0388	0.6016	+0.1236	-20	-66
103 Tauri	5.5	+2.98	+ 8.1	+24 10.4	17 49.2	- 8 35.5	+0.1623	0.6029	+0.1127	+53	-10

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118 Tauri	5.4	+2.95	+ 6.5	+25 05.7	1 01 41.0	- 1 03.5	+0.0437	0.6048	+0.0891	+45	-20
125 Tauri	5.1	2.94	5.6	25 51.6	05 32.9	+ 2 38.6	-0.3936	0.6053	0.0772	+21	-41
132 Tauri	5.0	2.88	5.3	24 32.8	08 59.8	+ 5 56.8	+1.1597	0.6057	0.0664	+40	+15
139 Tauri	4.7	2.88	4.3	25 56.9	12 17.9	+ 9 06.4	-0.0316	0.6057	0.0561	+41	-21
ϵ Geminorum	3.2	2.68	1.4	25 12.3	2 05 20.4	+ 1 25.9	+1.2130	0.6027	+0.0022	+85	+58
37 Geminorum	5.7	+2.63	+ 0.6	+25 28.0	09 35.6	+ 5 30.4	+0.9322	0.6011	-0.0111	+90	+35
39 Geminorum	6.2	2.62	0.2	26 10.6	10 53.7	+ 6 45.2	+0.2014	0.6006	0.0151	+55	- 5
40 Geminorum	6.3	2.62	+ 0.1	26 00.8	11 08.7	+ 6 59.5	+0.3624	0.6005	0.0159	+66	+ 2
47 Geminorum	5.6	2.59	- 1.0	26 58.6	15 37.7	+11 17.4	-0.7102	0.5984	0.0296	+ 2	-62
52 Geminorum	6.1	2.54	0.7	25 00.7	16 54.3	-11 29.1	+1.2326	0.5977	0.0335	+82	+58
134 B. Geminorum	6.5	+2.56	- 1.4	+26 49.2	17 46.7	-10 38.9	-0.6244	0.5973	-0.0361	+ 7	-55
<i>A</i> Geminorum	5.1	2.49	1.2	25 11.4	20 14.6	- 8 17.1	+0.9254	0.5959	0.0435	+90	+32
<i>v</i> Geminorum	4.3	2.46	2.8	27 03.4	3 00 59.5	- 3 43.8	-1.2050	0.5930	0.0575	-40	-61
<i>c</i> Geminorum	5.5	2.40	2.8	25 57.4	04 10.3	- 0 40.8	-0.2864	0.5909	0.0666	+27	-30
<i>n</i> Geminorum	3.6	2.37	2.4	24 34.3	04 19.0	- 0 32.4	+1.1106	0.5908	0.0670	+90	+43
ω Cancri	6.1	+2.30	- 3.7	+25 35.4	10 44.9	+ 5 38.1	-0.4140	0.5862	-0.0849	+19	-45
4 Cancri	6.2	2.28	3.6	25 17.3	11 04.2	+ 5 56.6	-0.1332	0.5860	0.0857	+35	-26
η Cancri	5.9	2.24	4.6	25 43.6	14 31.4	+ 9 15.6	-0.8933	0.5832	0.0950	-10	-65
λ Cancri	5.9	2.16	4.4	24 14.9	18 34.4	-10 50.8	+0.2109	0.5800	0.1054	+56	-11
28 Cancri	6.1	2.11	4.9	24 23.0	21 50.4	- 7 42.4	-0.2848	0.5773	0.1136	+27	-40
ν^1 Cancri	5.7	+2.09	- 5.0	+24 19.4	23 01.3	- 6 34.2	-0.3594	0.5763	-0.1165	+23	-44
ν^2 Cancri	6.4	2.08	5.1	24 19.8	23 37.8	- 5 59.1	-0.4369	0.5758	0.1180	+18	-50
194 B. Cancri	6.3	1.85	6.4	23 16.2	4 14 01.8	+ 7 52.8	-1.2890	0.5631	0.1504	-49	-67
ξ Cancri	5.2	1.84	6.2	22 20.2	14 51.0	+ 8 40.1	-0.4465	0.5623	0.1521	+18	-53
79 Cancri	6.1	1.83	6.2	22 17.3	15 16.4	+ 9 04.7	-0.4615	0.5619	0.1530	+17	-54
90 H ¹ Cancri	6.1	+1.80	- 6.2	+21 34.7	16 41.2	+10 26.4	+0.0549	0.5607	-0.1559	+46	-27

ELEMENTS OF OCCULTATIONS, 1928

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	α'	γ'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
57 B. Leonis	6.5	+1.59	-6.7	+19 11.6	5 06 18.2	-0 25.4	+0.2423	0.5486	-0.1809	+57	-20
η Leonis	3.6	1.43	6.8	17 06.8	16 45.8	+9 41.1	+0.4452	0.5397	0.1972	+70	-12
42 Leonis	6.1	1.33	6.7	15 20.2	23 55.7	-7 42.5	+0.9379	0.5342	0.2065	+90	+15
46 Leonis	5.8	1.26	6.8	14 30.3	6 04 33.2	-2 54.7	+0.7796	0.5305	0.2125	+90	+4
h Leonis	5.5	1.18	7.3	14 34.4	11 28.5	+3 47.6	-0.7902	0.5254	0.2201	0	-76
ϵ Leonis	4.1	+0.98	-7.1	+10 55.4	7 06 19.8	-1 55.6	-1.2191	0.5139	-0.2359	-29	-80
ω Virginis	5.4	0.89	6.7	8 31.9	13 52.1	+5 23.4	-0.4515	0.5102	0.2404	+19	-67
ν Virginis	4.2	0.85	6.5	6 55.9	17 44.6	+9 09.1	+0.3329	0.5084	0.2423	+62	-24
36 B. Virginis	6.5	0.76	6.5	5 57.5	8 03 12.7	-5 30.2	-0.9317	0.5049	0.2458	-7	-85
c Virginis	5.1	0.68	6.2	3 42.7	12 07.0	+3 00.0	-0.7025	0.5024	0.2478	+6	-87
46 Virginis	6.1	+0.55	-5.2	-2 59.0	9 09 56.9	+0 13.3	+1.1615	0.4992	-0.2474	+88	+23
48 Virginis	6.5	0.54	5.3	3 16.6	11 45.3	+1 58.7	+1.0370	0.4991	0.2470	+87	+14
65 Virginis	6.0	0.50	5.3	4 33.0	22 21.2	-11 43.0	-0.1732	0.4993	0.2439	+33	-52
66 Virginis	5.7	0.50	5.3	4 47.4	23 01.5	-11 04.0	-0.0732	0.4993	0.2436	+38	-47
72 Virginis	6.1	0.48	5.1	6 06.0	10 02 13.6	-7 57.1	+0.5850	0.4995	0.2423	+78	-12
l Virginis	4.8	+0.47	-5.2	-5 53.2	03 04.4	-7 07.7	+0.1450	0.4996	-0.2419	+50	-35
80 Virginis	5.6	0.47	5.3	5 01.9	05 00.8	-5 14.6	-1.2613	0.4998	0.2410	-33	-90
NEW MOON.											
24 Ophiuchi	5.5	+0.59	-5.3	-23 02.4	14 12 03.0	-1 16.1	-0.8907	0.5361	-0.1117	-23	-90
88 B. Ophiuchi	6.3	+0.62	-5.5	-24 59.1	13 31.0	+0 09.0	+1.1032	0.5367	-0.1088	+66	+26
26 Ophiuchi	5.8	0.60	5.6	24 52.9	13 36.4	+0 14.2	+0.9779	0.5367	0.1086	+66	+16
137 B. Ophiuchi	6.3	0.65	5.5	25 10.1	19 17.6	+5 44.4	+0.7126	0.5388	0.2096	+65	-2
39 Ophiuchi	5.1	0.65	5.3	24 12.7	22 00.8	+8 22.2	-0.6083	0.5398	0.0912	-8	-87
θ Ophiuchi	3.3	0.67	5.3	24 55.8	23 52.0	+10 09.7	+0.0260	0.5404	0.0873	+24	-41
191 B. Ophiuchi	6.5	+0.68	-5.2	-24 10.8	15 01 19.1	+11 33.9	-0.9323	0.5408	-0.0842	-28	-90
44 Ophiuchi	4.1	0.69	5.3	24 06.7	01 54.6	-11 51.8	-1.0576	0.5410	0.0829	-37	-90
136 G. Ophiuchi	6.5	0.66	5.4	25 52.9	02 08.4	-11 38.4	+0.8909	0.5411	0.0824	+65	+10
151 G. Ophiuchi	6.0	0.71	5.4	26 13.0	04 22.2	-9 29.1	+1.0844	0.5418	0.0776	+64	+25
63 Ophiuchi	6.1	0.80	4.9	24 52.5	15 04.1	+0 51.4	-1.1101	0.5447	0.0539	-44	-90
Venus	-3.4	..	..	-25 10.7	15 27.1	+1 13.6	-0.7958	0.4898	-0.0508	-22	-90
66 B. Sagittarii	4.7	+0.91	-4.9	27 04.3	16 01 36.1	+11 02.1	+0.8855	0.5467	0.0297	+63	+10
67 B. Sagittarii	6.4	0.90	4.6	25 38.1	01 55.0	+11 20.3	-0.7165	0.5468	0.0290	-20	-90
68 G. Sagittarii	6.2	0.95	4.7	26 40.8	06 00.2	-8 42.8	+0.3432	0.5474	0.0195	+35	-23
λ Sagittarii	2.9	0.94	4.5	25 27.9	06 08.0	-8 35.2	-1.0064	0.5474	0.0192	-39	-90
69 G. Sagittarii	6.3	+0.95	-4.7	-26 48.2	06 10.4	-8 32.9	+0.4760	0.5474	-0.0191	+44	-16
86 B. Sagittarii	6.5	0.95	4.6	26 37.8	06 33.5	-8 10.6	+0.2778	0.5475	0.0182	+32	-27
ρ Sagittarii	3.3	1.04	4.3	27 04.1	14 06.8	-0 52.8	+0.6904	0.5481	-0.0004	+59	-3
σ Sagittarii	2.1	1.07	4.0	26 23.3	18 28.1	+3 19.6	-0.0398	0.5483	+0.0098	+13	-45
201 B. Sagittarii	5.9	1.16	3.4	26 01.8	17 02 35.3	+11 10.1	-0.2784	0.5482	0.0290	+3	-60
ψ Sagittarii	4.8	+1.17	-3.1	-25 23.0	03 38.4	-11 48.9	-0.9601	0.5481	+0.0315	-35	-90
248 B. Sagittarii	5.7	1.25	3.2	27 08.1	10 05.5	-5 35.0	+1.2219	0.5477	0.0465	+63	+43
51 Sagittarii	5.8	1.26	2.3	24 52.7	12 54.7	-2 51.7	-1.1212	0.5475	0.0531	-45	-90
h Sagittarii	4.7	1.27	2.4	25 02.7	13 12.8	-2 34.1	-0.9222	0.5474	0.0538	-30	-90
ω Sagittarii	4.8	1.39	2.1	26 29.5	21 51.9	+5 47.2	+1.2197	0.5462	0.0736	+64	+41
A Sagittarii	4.9	+1.40	-2.0	-26 23.5	23 17.4	+7 09.8	+1.2164	0.5460	+0.0769	+64	+41
56 B. Capricorni	6.3	1.62	+0.6	24 02.3	18 18 11.1	+1 25.4	+0.4855	0.5419	0.1182	+53	-16
86 B. Capricorni	6.2	1.66	0.6	24 03.2	19 00 07.9	+7 10.2	+1.2399	0.5404	0.1305	+66	+40
χ Capricorni	5.3	1.70	2.1	21 29.0	07 23.6	-9 48.6	-0.5474	0.5384	0.1450	+1	-80
27 Capricorni	6.1	1.71	2.3	20 50.8	07 51.5	-9 21.6	-1.1696	0.5383	0.1459	-40	-90
ϕ Capricorni	5.3	+1.73	+2.6	-20 57.0	10 42.3	-6 36.4	-0.6317	0.5375	+0.1513	-3	-88

NOVEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928-0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
		s	"	"	d h m	h m				"	"
33 Capricorni	5.3	+1.78	+2.8	-21 09.5	19 14 42.4	-2 44.2	+0.2131	0.5364	+0.1589	+42	-31
35 Capricorni	6.0	1.80	2.9	21 30.5	16 09.5	-1 19.9	+0.8230	0.5361	0.1616	+69	+4
128 B. Capricorni	6.5	1.79	3.7	19 27.7	17 28.1	-0 03.9	-1.1682	0.5357	0.1640	-37	-90
37 Capricorni	5.7	1.82	3.6	20 24.3	19 45.4	+2 08.9	+0.2277	0.5351	0.1681	+43	-30
e Capricorni	4.7	1.83	3.9	19 47.3	20 48.8	+3 10.2	-0.2567	0.5348	0.1700	+19	-58
i Capricorni	4.8	+1.86	+4.3	-19 11.6	23 27.3	+5 43.6	-0.4393	0.5341	+0.1746	+10	-71
143 B. Capricorni	6.1	1.87	4.1	19 57.0	23 43.3	+5 59.1	+0.4181	0.5341	0.1751	+55	-20
154 B. Capricorni	6.1	1.90	4.7	18 57.5	20 03 45.1	+9 53.0	+0.0744	0.5330	0.1820	+37	-39
161 B. Capricorni	6.4	1.95	5.4	18 14.9	08 46.2	-9 15.7	+0.2498	0.5318	0.1903	+48	-29
29 Aquarii	6.5	1.93	5.8	17 18.6	08 53.8	-9 08.2	-0.7274	0.5318	0.1905	-4	-90
56 Aquarii	6.1	+2.05	+7.7	-14 57.1	22 18.0	+3 50.2	-0.5373	0.5292	+0.2108	+9	-77
69 Aquarii	5.6	2.13	8.6	14 26.0	21 06 44.5	-11 59.3	+0.7431	0.5279	0.2221	+76	-3
7 Aquarii	4.4	2.13	8.8	13 58.2	07 39.4	-11 06.1	+0.4887	0.5278	0.2233	+64	-19
74 Aquarii	5.8	2.13	9.6	11 59.8	09 33.1	-9 16.0	-1.1913	0.5276	0.2257	-31	-90
257 B. Aquarii	6.3	2.18	9.4	13 27.2	12 31.2	-6 23.5	+1.0140	0.5273	0.2292	+77	+14
290 B. Aquarii	6.3	+2.23	+10.7	-11 04.6	19 52.0	+0 43.3	+0.2387	0.5270	+0.2376	+52	-30
μ^1 Aquarii	4.5	2.24	11.3	9 28.6	20 27.1	+1 17.3	-1.2920	0.5270	0.2382	-40	-89
μ^2 Aquarii	4.6	2.23	11.3	9 34.4	21 26.7	+2 15.0	-0.9545	0.5270	0.2392	-12	-90
μ^3 Aquarii	5.2	2.24	11.2	10 00.1	21 57.4	+2 44.7	-0.3841	0.5270	0.2397	+20	-65
336 B. Aquarii	6.3	2.29	11.6	9 39.5	22 02 51.5	+7 29.6	+0.4460	0.5271	0.2446	+66	-20
351 B. Aquarii	6.5	+2.30	+12.4	-7 51.6	06 02.1	+10 34.1	-0.6397	0.5272	+0.2474	+8	-85
376 B. Aquarii	6.3	2.36	13.1	6 46.6	12 21.6	-7 18.4	-0.1759	0.5278	0.2526	+33	-52
30 Piscium	4.7	2.42	13.5	6 24.6	18 51.9	-1 00.4	+1.1034	0.5289	0.2572	+84	+19
33 Piscium	4.8	2.43	13.8	6 06.4	20 30.0	+0 34.6	+1.2114	0.5292	0.2582	+84	+28
24 B. Ceti	6.0	2.45	14.0	5 38.7	22 54.2	+2 54.2	+1.3575	0.5297	0.2596	+81	+44
54 B. Ceti	6.3	+2.50	+15.1	-2 36.8	23 05 43.4	+9 30.3	+0.0388	0.5315	+0.2630	+44	-41
14 Ceti	5.4	2.56	15.7	-0 53.8	10 59.8	-9 23.4	-0.3161	0.5332	0.2649	+26	-61
26 Ceti	6.0	2.67	16.4	+0 59.2	24 00 19.9	+3 30.6	+1.3255	0.5388	0.2668	+87	+40
33 Ceti	6.1	2.69	16.8	2 04.1	03 28.3	+6 32.8	+1.0724	0.5404	0.2667	+90	+17
f Piscium	5.3	2.72	17.0	3 14.4	06 49.1	+9 46.9	+0.7850	0.5422	0.2663	+90	-1
μ Piscium	5.0	+2.80	+17.6	+5 46.7	12 28.4	-8 45.3	-0.2550	0.5454	+0.2648	+30	-56
JUPITER	-2.4	..	..	10 51.8	25 04 05.3	+6 19.4	-1.2325	0.5602	0.2577	-31	-80
31 Arletis	5.7	3.10	17.3	12 08.5	17 38.8	-4 36.4	+0.8980	0.5667	0.2429	+90	+10
o Arletis	5.8	3.14	17.5	15 00.8	20 57.8	-1 24.7	-1.1290	0.5694	0.2386	-23	-75
σ Arletis	5.4	3.16	17.2	14 47.5	23 51.6	+1 22.6	-0.2249	0.5719	0.2347	+31	-49
145 B. Arletis	6.5	+3.21	+16.6	+15 34.9	26 05 17.1	+6 36.0	+0.2506	0.5765	+0.2265	+57	-23
175 B. Arletis	6.4	3.32	15.8	18 30.6	14 16.9	-8 45.1	-0.6485	0.5842	0.2108	+8	-70
26 B. Tauri	6.4	3.33	15.1	17 36.1	17 05.8	-6 02.8	+0.8255	0.5866	0.2053	+90	+10
13 Tauri	5.6	3.38	15.0	19 28.5	20 17.7	-2 58.5	-0.3599	0.5893	0.1987	+23	-53
14 Tauri	6.2	3.39	14.9	19 26.6	20 52.0	-2 25.6	-0.2152	0.5898	0.1975	+31	-45
A Tauri	4.5	+3.48	+13.6	+21 53.4	27 04 55.2	+5 18.1	-1.0870	0.5963	+0.1792	-22	-69
39 Tauri	6.1	3.48	13.5	21 49.2	05 09.8	+5 32.1	-0.9744	0.5963	0.1786	-14	-69
192 B. Tauri	6.1	3.50	13.1	22 14.0	08 01.5	+8 16.8	-0.8768	0.5987	0.1716	-7	-68
o Tauri	4.8	3.46	12.8	20 24.4	09 42.8	+9 53.9	+1.1927	0.5999	0.1674	+90	+41
51 Tauri	5.6	3.49	12.7	21 24.5	10 07.4	+10 17.5	+0.2833	0.6002	0.1664	+60	-14
53 Tauri	5.3	+3.48	+12.6	+20 58.4	10 31.6	+10 40.7	+0.7748	0.6005	+0.1653	+90	+12
50 Tauri	5.2	3.50	12.6	21 36.3	10 35.2	+10 44.1	+0.1683	0.6005	0.1652	+53	-20
224 B. Tauri	6.1	3.48	12.5	20 39.4	11 38.3	+11 44.6	+1.2663	0.6013	0.1624	+83	+51
227 B. Tauri	5.9	3.48	12.4	20 49.1	12 04.3	-11 50.5	+1.1775	0.6016	0.1613	+90	+41
k Tauri	4.1	3.52	12.2	22 08.0	12 44.5	-11 11.9	+0.0015	0.6021	0.1596	+43	-29
67 Tauri	5.4	+3.52	+12.2	+22 02.4	12 45.7	-11 10.8	+0.0962	0.6021	+0.1595	+48	-24

ELEMENTS OF OCCULTATIONS, 1928

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THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time:	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
²⁸ v Tauri	4.2	+3.54	+12.1	+22 39.3	27 13 05.2	-10 52.2	-0.4520	0.6023	+0.1586	+18	-54
72 Tauri	5.4	3.53	12.1	22 50.3	13 27.4	-10 30.8	-0.5730	0.6026	0.1577	+11	-61
247 B. Tauri	5.8	3.51	12.0	21 27.8	13 44.4	-10 14.5	-0.8137	0.6028	0.1569	+90	+14
284 B. Tauri	6.0	3.56	11.3	23 11.9	16 52.7	-7 14.1	-0.3907	0.6049	0.1484	+21	-50
7 Tauri	4.3	3.55	11.0	22 49.4	19 01.2	-5 11.1	+0.2774	0.6062	0.1424	+60	-13
95 Tauri	6.2	+3.58	+10.8	+23 57.4	19 22.3	-4 50.8	-0.7794	0.6064	+0.1414	-2	-67
300 B. Tauri	6.2	3.57	10.7	23 30.0	20 17.5	-3 58.0	-0.2049	0.6070	0.1388	+31	-38
315 B. Tauri	6.3	3.60	9.8	24 28.9	28 00 09.6	-0 15.7	-0.6471	0.6092	0.1276	+6	-63
99 Tauri	6.0	3.59	9.7	23 50.4	00 44.1	+0 17.3	+0.0517	0.6095	0.1259	+46	-23
k Tauri	5.6	3.62	9.6	24 56.6	00 50.9	+0 23.8	-1.0113	0.6096	0.1256	-18	-66
103 Tauri	5.5	+3.60	+8.8	+24 10.4	04 29.3	+3 52.8	+0.1773	0.6114	0.1146	+53	-16
118 Tauri	5.4	3.62	7.0	25 05.7	12 08.2	+11 11.9	+0.0625	0.6143	0.0908	+47	-19
125 Tauri	5.1	3.64	6.1	25 51.6	15 53.3	-9 12.8	-0.3676	0.6153	0.0787	+22	-41
132 Tauri	5.0	3.60	5.4	24 32.8	19 14.0	-6 00.9	+1.1646	0.6159	0.0678	+90	+49
139 Tauri	4.7	3.62	4.5	25 56.9	22 25.8	-2 57.5	-0.0089	0.6163	0.0573	+42	-20
MARS	-1.2	...	...	+25 33.5	29 12 03.2	+10 04.0	+0.8520	0.6277	+0.0093	+90	+30
e Geminorum	3.2	+3.51	+0.5	25 12.2	14 53.7	-11 13.0	+1.2189	0.6145	+0.0024	+84	+58
37 Geminorum	5.7	3.49	-0.5	25 28.0	18 59.7	-7 17.6	+0.9430	0.6131	-0.0112	+90	+36
39 Geminorum	6.2	3.49	0.8	26 10.6	20 15.0	-6 05.0	+0.2246	0.6127	0.0153	+57	-4
40 Geminorum	6.3	3.49	1.0	26 00.8	20 29.4	-5 51.8	+0.3820	0.6125	0.0161	+67	+3
47 Geminorum	5.6	+3.48	-2.3	+26 58.5	30 00 48.6	-1 43.8	-0.6709	0.6105	-0.0301	+4	-59
52 Geminorum	6.1	3.42	2.2	25 00.7	02 02.4	-0 33.2	+1.2389	0.6008	0.0341	+81	+59
134 B. Geminorum	6.5	3.46	2.8	26 49.2	02 52.8	+0 15.1	-0.5864	0.6004	0.0368	+9	-52
21 Geminorum	5.1	3.38	2.9	25 11.4	05 15.4	+2 31.7	+0.9372	0.6080	0.0443	+90	+33
v Geminorum	4.3	3.39	4.5	27 03.4	09 49.7	+6 54.3	-1.1561	0.6051	0.0586	-33	-63
c Geminorum	5.5	+3.32	-4.8	+25 57.3	12 53.3	+9 50.1	-0.2531	0.6029	-0.0679	+28	-34
k Geminorum	3.6	3.29	4.5	24 34.2	13 01.8	+9 58.2	+1.1197	0.6028	0.0683	+90	+45
o Canceri	6.1	3.24	6.1	25 35.4	19 13.4	-8 05.5	-0.3781	0.5980	0.0866	+21	-43
4 Canceri	6.2	3.23	6.0	25 17.2	19 31.9	-7 47.8	-0.1021	0.5977	0.0874	+37	-27
ψ Canceri	5.9	+3.19	-7.2	+25 43.5	22 51.5	-4 36.4	-0.8490	0.5949	-0.0968	-7	-65

DECEMBER.

2 Canceri	5.9	+3.11	-7.3	+24 14.9	1 02 45.7	-0 51.7	+0.2363	0.5914	-0.1075	+57	-12
28 Canceri	6.1	3.07	8.0	24 23.0	05 54.6	+2 09.6	-0.2509	0.5884	0.1158	+29	-38
v ¹ Canceri	5.7	+3.05	-8.2	+24 19.4	07 03.0	+3 15.3	-0.3242	0.5873	-0.1188	+25	-42
v ² Canceri	6.4	3.04	8.3	24 19.7	07 38.2	+3 49.1	-0.4004	0.5808	0.1203	+20	-48
194 B. Canceri	6.3	2.81	10.4	23 16.1	21 32.5	-6 48.9	-1.2397	0.5728	0.1531	-40	-67
ε Canceri	5.2	2.80	10.2	22 20.1	22 20.0	-6 03.2	-0.4108	0.5720	0.1549	+20	-51
79 Canceri	6.1	2.79	10.3	22 17.2	22 44.6	-5 39.6	-0.4255	0.5716	0.1557	+19	-52
90 H ¹ Canceri	6.1	+2.75	-10.3	+21 34.7	2 00 06.7	-4 20.6	+0.0826	0.5702	-0.1586	+48	-26
57 B. Leonis	6.5	2.53	11.5	19 11.5	13 18.6	+8 22.7	+0.2663	0.5566	0.1837	+59	-18
η Leonis	3.6	2.35	11.9	17 06.7	23 29.2	-5 48.0	+0.4656	0.5464	0.1999	+72	-11
42 Leonis	6.1	2.24	12.0	15 20.1	3 06 09.0	+0 38.3	+0.9516	0.5401	0.2089	+90	+16
46 Leonis	5.8	2.17	12.2	14 30.2	10 59.8	+5 19.5	+0.7950	0.5357	0.2149	+90	+5
k Leonis	5.5	+2.07	-12.9	+14 34.3	17 46.7	+11 53.3	-0.7582	0.5299	-0.2222	+2	-76
l Leonis	4.1	1.83	12.9	10 55.3	4 12 20.0	+5 52.0	-1.1893	0.5162	0.2372	-26	-80
o Virginis	5.4	1.72	12.4	8 31.8	19 47.2	-10 54.1	-0.4298	0.5117	0.2413	+20	-65
r Virginis	4.2	1.67	12.2	6 55.8	23 37.5	-7 10.6	+0.3484	0.5096	0.2439	+63	-23
36 B. Virginis	6.5	1.56	12.2	5 57.4	5 09 01.5	+1 57.1	-0.9110	0.5052	0.2461	-6	-85
c Virginis	5.1	+1.45	-11.7	+3 42.6	17 53.3	+10 33.7	-0.6855	0.5019	-0.2478	+7	-84

DECEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion	Greenwich Mean Time	Hour Angle, H	Y	x'	y'	N	S.
		$\Delta\alpha$	$\Delta\delta$								
46 Virgo	6.1	+1.20	-10.0	-2 50.1	6 15 42.4	+7 46.1	+1.1694	0.4974	-0.2466	+88	+24
48 Virgo	6.5	1.25	10.0	3 16.7	17 30.0	+9 31.7	+1.0450	0.4072	0.2462	+87	+15
65 Virgo	6.0	1.17	9.8	4 33.1	7 04 08.7	-4 08.1	-0.1645	0.4970	0.2429	+34	-52
66 Virgo	5.7	1.18	9.8	4 47.5	6 44 58.9	-3 29.0	-0.0647	0.4970	0.2426	+39	-46
72 Virgo	6.1	1.14	9.4	6 06.1	08 02.0	-0 21.3	+0.5927	0.4972	0.2412	+79	-12
1 Virgo	4.8	+1.13	-9.5	-5 53.2	08 53.0	+0 28.4	+0.1529	0.4972	-0.2409	+50	-35
80 Virgo	5.6	1.12	9.6	5 02.0	10 40.0	+2 22.0	-1.2529	0.4974	0.2400	-32	-90
88 Virgo	6.5	1.07	9.4	6 25.9	17 48.5	+9 09.3	-1.3278	0.4983	0.2363	-43	-86
48 B. Virgo	6.1	1.22	9.1	7 42.5	21 27.0	-11 18.6	-0.8354	0.4989	0.2340	-3	-90
43 B. Virgo	6.5	1.22	8.8	8 54.0	8 02 32.4	-6 21.8	-0.6909	0.4999	0.2306	+5	-90
95 Virgo	5.4	+1.01	-8.7	-8 58.4	03 49.3	-5 07.0	-0.9218	0.5002	-0.2297	-9	-90
96 Virgo	6.5	1.01	8.5	9 59.8	05 03.1	-3 55.3	-0.0758	0.5005	0.2288	+37	-47
7 Virgo	4.4	1.02	8.2	11 50.5	07 40.3	-1 52.6	-0.6159	0.5011	0.2272	+8	-83
2 Libra	6.3	0.97	8.2	11 24.3	12 49.1	+3 37.6	-0.2042	0.5026	0.2227	+24	-60
4 G. Libra	6.5	0.96	8.2	11 20.7	13 29.8	+4 17.2	-0.4919	0.5028	0.2221	+14	-73
6 B. Libra	6.2	0.88	7.6	-12 00.1	20 06.7	+10 42.8	-1.2170	0.5030	-0.2160	-33	-90
11 Libra	5.4	0.91	7.6	13 51.1	9 02 35.4	-6 50.6	-0.5494	0.5074	0.2095	+9	-78
8 Libra	5.4	0.97	7.3	15 42.1	03 17.7	-6 18.6	+1.3506	0.5077	0.2087	+71	+51
9 Libra	5.3	0.88	7.2	15 48.8	11 55.5	+1 47.7	-0.0418	0.5111	0.1993	+53	+15
22 Libra	6.5	0.88	7.2	16 12.5	11 44.4	+1 53.4	+0.1913	0.5112	0.1992	+46	-33
20 Libra	6.3	0.87	6.9	-17 32.1	15 44.4	+5 40.4	-0.8306	0.5129	-0.1943	+73	+3
28 Libra	6.2	0.89	6.8	17 54.7	19 00.0	+5 56.2	+0.6543	0.5144	0.1901	+71	-7
11 H. Libra	5.4	0.85	6.5	19 25.7	10 00 58.6	-9 15.8	+1.2303	0.5172	0.1820	+71	+37
41 Libra	5.3	0.84	6.6	19 04.5	04 10.4	-6 04.8	+0.2644	0.5187	-0.1775	+47	-28
NEW MOON.											
201 B. Scutarii	5.9	+1.00	-2.6	-26 01.8	14 5 33.1	-5 04.6	-0.2419	0.5504	+0.0020	+5	-58
5 Scutarii	2.5	1.00	2.7	25 23.0	11 30.1	-4 03.7	-0.0120	0.5534	0.0325	-31	-90
24 B. Scutarii	5.7	1.14	2.6	27 05.1	16 2 5	2 00.2	+1.2030	0.5407	0.0471	+63	+53
51 Scutarii	5.5	1.14	2.1	24 52.7	18 51.2	+4 52.3	-1.0522	0.5402	0.0537	-42	-90
8 Scutarii	4.7	1.14	2.1	-25 02.7	10 4.4	-5 09.0	-0.8827	0.5493	-0.0541	-28	-90
29 Scutarii	4.8	1.23	1.7	26 26.5	15 43 45.1	-10 29.2	-1.2675	0.5475	0.0743	+64	+51
1 Scutarii	4.9	1.23	1.7	26 25.5	05 13.0	-9 09.5	+1.2633	0.5474	0.0775	+64	+51
56 B. Capricorni	6.3	1.3	0.4	24 02.3	10 00 10.4	+9 11.6	-0.5417	0.5421	0.1186	+60	-13
86 B. Capricorni	6.2	1.41	0.3	24 03.2	00 08.8	-9 01.5	+1.3030	0.5420	0.1308	+66	+55
2 Capricorni	5.3	1.44	1.5	21 20	13 27.7	-1 57.1	-0.4910	0.5374	+0.1451	+4	-75
27 Capricorni	6.1	1.45	1.6	20 50.8	13 55.8	-1 29.0	-1.1168	0.5373	0.1460	-35	-90
7 Capricorni	5.3	1.40	1.9	20 57.1	10 48.2	+1 16.5	-0.5745	0.5362	0.1514	-6	-52
33 Capricorni	5.3	1.50	2.2	21 00.5	20 40.7	+5 11.5	+0.2777	0.5348	0.1588	+46	-28
35 Capricorni	6.0	1.52	2.1	21 50.5	22 18.7	+6 36.7	+0.8927	0.5342	0.1614	+69	+8
128 B. Capricorni	6.5	+1.51	-2.5	-19 27.7	23 38.2	+7 53.6	-1.1128	0.5338	+0.1638	-32	-90
37 Capricorni	5.7	1.54	2.7	20 24.3	17 01 57.1	-10 08.1	+0.2947	0.5329	0.1678	+47	-27
6 Capricorni	4.7	1.55	3.0	19 47.3	03 01.3	+11 10.2	-0.1931	0.5325	0.1697	+22	-54
1 Capricorni	4.8	1.58	3.3	19 11.7	05 41.0	-10 14.4	-0.3762	0.5316	0.1742	+13	-60
143 B. Capricorni	6.1	1.58	3.1	19 57.0	05 58.0	-9 58.6	+0.4883	0.5315	0.1746	+59	-16
154 B. Capricorni	6.1	1.61	3.6	-18 57.5	10 03.4	-6 01.1	+0.1436	0.5300	+0.1814	+41	-35
161 B. Capricorni	6.4	1.65	4.1	18 14.9	15 09.2	-1 05.1	+0.3227	0.5285	0.1894	+52	-26
20 Aquarii	6.5	1.64	4.6	17 18.6	15 17.0	-0 57.5	-0.6639	0.5283	0.1896	0	-90
50 Aquarii	6.1	1.71	6.2	14 57.2	18 04 56.6	-11 43.7	-0.4681	0.5241	0.2001	+13	-72
69 Aquarii	5.6	1.82	6.9	14 26.1	13 34.7	-3 21.6	+0.8364	0.5220	0.2199	+76	+2
7 Aquarii	4.4	1.82	7.1	-13 58.3	14 31.0	-2 27.0	+0.5427	0.5218	+0.2210	+60	11

DECEMBER

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928 o.	Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y	N.	S.
		$\Delta\alpha$ $\Delta\delta$		d h m	h m					
74 Aquarii	5.8	+1.83 + 7.9	-11 59.9	18 16 27.5	- 0 34.1	-1.1280	0.5214	+0.2232	-26	-90
257 B. Aquarii	6.3	1.87 7.6	13 27.3	19 30.2	+ 2 23.0	+1.1071	0.5208	0.2266	+77	+20
290 B. Aquarii	6.3	1.93 8.8	11 04.6	19 03 03.2	+ 0 42.1	-0.3232	0.5197	0.2344	+57	-26
ψ^1 Aquarii	4.5	1.95 9.4	9 28.6	03 39.3	+10 17.1	-1.2202	0.5196	0.2350	-33	-90
ψ^2 Aquarii	4.6	1.94 9.4	9 34.4	04 40.6	+11 16.6	-0.8868	0.5195	0.2360	- 8	-90
ψ^3 Aquarii	5.2	+1.95 + 9.3	-10 00.1	05 12.3	+11 47.4	-0.3081	0.5195	+0.2365	+23	-61
336 B. Aquarii	6.3	1.99 9.7	9 39.6	10 15.2	- 7 19.0	+0.5350	0.5191	0.2410	+72	-15
351 B. Aquarii	6.5	2.01 10.5	7 51.6	13 31.8	- 4 08.5	-0.5669	0.5190	0.2436	+11	-79
376 B. Aquarii	6.3	2.08 11.1	6 46.6	20 03.7	+ 2 11.5	-0.0956	0.5190	0.2485	+37	-48
30 Piscium	4.7	2.15 11.4	6 24.7	20 02 47.3	+ 8 42.8	+1.2050	0.5195	0.2527	+84	+27
33 Piscium	4.8	+2.16 +11.8	- 6 06.4	04 28.8	+10 21.1	+1.3148	0.5198	+0.2536	+84	+38
54 B. Ceti	6.3	2.25 13.2	2 36.8	14 02.1	- 4 23.2	+0.1220	0.5215	0.2580	+49	-36
14 Ceti	5.4	2.32 13.9	- 0 53.8	19 30.2	+ 0 54.8	-0.2397	0.5230	0.2596	+30	-56
33 Ceti	6.1	2.50 15.1	+ 2 04.0	21 12 36.1	- 6 31.4	+1.1685	0.5296	0.2611	+90	+25
f Piscium	5.3	2.54 15.5	3 14.4	16 04.6	- 3 09.7	+0.8747	0.5314	0.2607	+90	+ 4
μ Piscium	5.0	+2.64 +16.2	+ 5 46.7	21 56.7	+ 2 31.1	-0.1857	0.5347	+0.2593	+33	-52
31 Arietis	5.7	3.05 16.7	12 08.5	23 04 08.2	+ 7 41.2	+0.9667	0.5572	0.2382	+90	+14
o Arietis	5.8	3.11 17.2	15 00.7	07 33.5	+10 59.2	-1.0916	0.5602	0.2341	-20	-75
σ Arietis	5.4	3.14 16.9	14 47.5	10 32.4	-10 08.4	-0.1771	0.5629	0.2303	+33	-46
145 B. Arietis	6.5	3.22 16.4	15 34.9	16 07.1	- 4 45.9	+0.3002	0.5681	0.2225	+60	-20
175 B. Arietis	6.4	+3.39 +16.1	+18 30.6	24 01 20.5	+ 4 06.8	-0.6160	0.5769	+0.2073	+ 9	-69
26 B. Tauri	6.4	3.41 15.2	17 36.1	04 13.3	+ 6 53.0	+0.8700	0.5797	0.2020	+90	+13
13 Tauri	5.6	3.48 15.4	19 28.5	07 29.3	+10 01.4	-0.3302	0.5828	0.1956	+25	-51
14 Tauri	6.2	3.50 15.2	19 26.6	08 04.3	+10 35.0	-0.1846	0.5834	0.1945	+33	-42
A Tauri	4.5	3.65 14.3	21 53.4	16 16.4	- 5 32.3	-1.0703	0.5911	0.1768	-21	-69
39 Tauri	6.1	+3.66 +14.2	+21 49.2	16 31.2	- 5 18.1	-0.9571	0.5914	+0.1762	-12	-69
192 B. Tauri	6.1	3.68 13.8	22 14.0	19 25.5	- 2 30.8	-0.8609	0.5940	0.1644	- 6	-68
ω Tauri	4.8	3.66 13.2	20 24.4	21 08.4	- 0 52.1	+1.2209	0.5955	0.1652	+90	+44
51 Tauri	5.6	3.70 13.3	21 24.5	21 33.3	- 0 28.3	+0.3051	0.5959	0.1642	+62	-13
53 Tauri	5.3	3.69 13.1	20 58.4	21 57.7	-0.04.9	+0.7993	0.5962	0.1632	+90	+13
56 Tauri	5.2	+3.70 +13.2	+21 36.3	22 01.4	- 0 01.3	+0.1889	0.5963	+0.1630	+54	-19
224 B. Tauri	6.1	3.69 12.9	20 39.4	23 05.4	+ 1 00.0	+1.2926	0.5972	0.1604	+77	+55
227 B. Tauri	5.9	3.70 12.8	20 49.1	23 31.7	+ 1 25.3	+1.2027	0.5976	0.1593	+90	+43
κ Tauri	4.1	3.74 12.9	22 08.0	25 00 12.4	+ 2 04.3	+0.0189	0.5982	0.1576	+44	-28
67 Tauri	5.4	3.74 12.8	22 02.4	00 13.5	+ 2 05.3	+0.1141	0.5982	0.1575	+50	-23
ν Tauri	4.2	+3.76 +12.8	+22 39.3	00 33.4	+ 2 24.4	-0.4376	0.5985	+0.1567	+19	-53
72 Tauri	5.4	3.76 12.8	22 50.3	00 55.8	+ 2 46.0	-0.5596	0.5988	0.1557	+12	-60
247 B. Tauri	5.8	3.74 12.5	21 27.8	01 13.0	+ 3 02.4	+0.8347	0.5991	0.1550	+90	+16
284 B. Tauri	6.0	3.82 12.1	23 11.9	04 23.4	+ 6 04.9	-0.3884	0.6017	0.1466	+21	-49
τ Tauri	4.3	3.82 11.6	22 49.4	06 33.1	+ 8 09.2	+0.2898	0.6034	0.1408	+61	-12
95 Tauri	6.2	+3.86 +11.7	+23 57.4	06 54.3	+ 8 29.5	-0.7719	0.6037	+0.1398	- 1	-67
300 B. Tauri	6.2	3.85 11.4	23 30.0	07 50.0	+ 9 22.9	-0.1959	0.6044	0.1372	+32	-37
315 B. Tauri	6.3	3.92 10.6	24 28.9	11 43.8	-10 53.2	-0.6432	0.6074	0.1262	+ 7	-63
99 Tauri	6.0	3.90 10.4	23 50.4	12 18.5	-10 20.0	+0.0573	0.6078	0.1245	+46	-23
h Tauri	5.6	3.94 10.5	24 56.6	12 25.3	-10 13.5	-1.0091	0.6078	0.1242	-18	-66
103 Tauri	5.5	+3.95 + 9.6	+24 10.4	16 04.8	- 6 43.4	+0.1793	0.6103	+0.1134	+54	-16
118 Tauri	5.4	4.03 7.7	25 05.7	23 44.4	+ 0 36.4	+0.0563	0.6147	0.0898	+46	-19
125 Tauri	5.1	4.08 6.8	25 51.6	26 03 29.2	+ 4 11.5	-0.3774	0.6164	0.0778	+21	-42
132 Tauri	5.0	4.05 5.8	24 32.8	06 49.2	+ 7 22.6	+1.1493	0.6176	0.0669	+90	+47
MARS	-1.4	...	26 45.0	08 29.8	+ 8 58.8	-0.9036	0.6361	0.0611	-11	-64
139 Tauri	4.7	+4.11 + 5.0	+25 56.9	10 00.1	+10 25.1	-0.0257	0.6187	+0.0565	+41	-20

ELEMENTS OF OCCULTATIONS, 1928.

DECEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1928.0.		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, <i>H</i>	<i>Y</i>	<i>z'</i>	<i>y'</i>	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
		s	"	° ' "	d h m	h m				°	' "
ϵ Geminorum	3.2	+4.12	+0.3	+25 12.2	27 02 18.0	+1 59.7	+1.1773	0.6197	+0.0013	+90	+54
37 Geminorum	5.7	4.12	-0.8	25 28.0	06 20.3	+5 51.2	+0.8980	0.6189	-0.0123	+90	+33
39 Geminorum	6.2	4.14	1.1	26 10.6	07 34.3	+7 02.0	+0.1832	0.6186	0.0165	+54	-7
40 Geminorum	6.3	4.14	1.2	26 00.8	07 48.5	+7 15.6	+0.3402	0.6186	0.0173	+64	+1
47 Geminorum	5.6	4.16	2.6	26 58.5	12 03.1	+11 19.0	-0.7098	0.6172	0.0315	+2	-62
52 Geminorum	6.1	+4.10	-2.8	+25 00.6	13 15.5	-11 31.8	+1.1828	0.6168	-0.0355	+90	+53
134 B. Geminorum	6.5	4.16	3.2	26 49.2	14 05.0	-10 44.5	-0.6279	0.6164	0.0382	+7	-56
Δ Geminorum	5.1	4.08	3.6	25 11.4	16 24.6	-8 31.0	+0.8796	0.6153	0.0459	+90	+20
ν Geminorum	4.3	4.13	5.2	27 03.3	20 53.1	-4 14.2	-1.1985	0.6130	0.0604	-39	-63
176 B. Geminorum	6.3	4.05	5.1	24 31.3	21 45.2	-3 24.3	+1.2491	0.6125	0.0631	+79	+53
c Geminorum	5.5	+4.07	-5.8	+25 57.3	23 52.6	-1 22.4	-0.3075	0.6112	-0.0699	+25	-38
κ Geminorum	3.6	4.03	5.8	24 34.2	28 00 00.8	-1 14.5	+1.0507	0.6111	0.0703	+90	+33
ω Cancri	6.1	4.02	7.4	25 35.3	06 03.3	+4 32.6	-0.4376	0.6069	0.0889	+18	-46
4 Cancri	6.2	4.01	7.5	25 17.2	06 21.3	+4 49.7	-0.1650	0.6067	0.0897	+33	-31
ψ Cancri	5.9	3.99	8.7	25 43.5	09 35.7	+7 56.0	-0.9063	0.6041	0.0994	-11	-65
λ Cancri	5.9	+3.92	-9.2	+24 14.9	13 23.5	+11 34.3	+0.1617	0.6009	-0.1102	+52	-15
28 Cancri	6.1	3.90	10.0	24 22.9	16 27.1	-9 29.7	-0.3226	0.5982	0.1188	+25	-42
ν^1 Cancri	5.7	3.88	10.3	24 19.3	17 33.5	-8 26.0	-0.3961	0.5972	0.1218	+21	-43
ν^2 Cancri	6.4	3.88	10.4	24 19.7	18 07.7	-7 53.2	-0.4718	0.5967	0.1233	+17	-52
194 B. Cancri(2d Star)	6.3	3.70	13.3	23 16.0	29 07 36.4	+5 03.0	-1.3123	0.5834	0.1568	-56	-65
ξ Cancri	5.2	+3.68	-13.2	+22 20.0	08 22.5	+5 47.4	-0.4964	0.5826	-0.1586	+15	-56
79 Cancri	6.1	3.67	13.3	22 17.2	08 46.3	+6 10.2	-0.5113	0.5822	0.1595	+15	-57
90 H ¹ Cancri	6.1	3.64	13.5	21 34.6	10 05.7	+7 26.6	-0.0120	0.5807	0.1624	+42	-30
57 B. Leonis	6.5	3.44	15.4	19 11.5	22 51.5	-4 16.5	+0.1560	0.5672	0.1881	+52	-24
η Leonis	3.6	3.28	16.4	17 06.6	30 08 41.6	+5 12.1	+0.3428	0.5568	0.2044	+63	-17
42 Leonis	6.1	+3.17	-16.8	+15 20.1	15 08.0	+11 25.2	+0.8154	0.5502	-0.2135	+90	+8
46 Leonis	5.8	3.10	17.1	14 30.2	19 49.1	-8 03.3	+0.6573	0.5456	0.2194	+89	-3
h Leonis	5.5	3.01	18.0	14 34.2	31 02 22.6	-1 43.0	-0.8767	0.5394	0.2267	-5	-77
l Leonis	4.1	+2.77	-18.6	+10 55.2	20 21.5	-8 18.7	-1.3139	0.5242	-0.2413	-39	-81

OCCULTATIONS VISIBLE AT GREENWICH.

* * The Angles are reckoned from the North Point and Vertex of the Moon's limb towards the East.

Date.	Star's Name.	Magnitude.	Disappearance.				Reappearance.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Vertex.			N. Point.	Vertex.
			h m	h m	°	°	h m	h m	°	°
Jan. 2	W.Z.C. 119	7.2	07 06	00 24	41	2				
3	32 B. Tauri	6.3	23 30	16 42	81	120	00 30	17 41	229	264
4	163 B. Tauri	5.8	10 28	03 37	127	88	11 02	04 12	211	174
4	129 H ¹ Tauri	5.8	23 35	16 42	38	80	00 24	17 32	281	322
5	W.B. (2) V. 1063	6.4	00 22	17 25	58	100				
5	394 B. Tauri	6.0	00 53	17 57	100	143	01 48	18 51	231	273
6	W.Z.C. 417	6.9	12 07	05 09	140	99				
6	W.Z.C. 476	6.7	04 55	21 54	128	159				
6	B.D. +24°1470	7.0	06 10	23 08	42	56				
7	ω Geminorum	5.2	08 55	01 54	129	97	09 54	02 52	243	204
7	48 Geminorum	5.8	13 15	06 13	77	36	14 04	07 02	299	261
7	B.D. +24°1806	7.0					05 42	22 37	301	334
8	B.D. +23°1863	6.7					07 28	00 23	218	227
8	5 B. Cancri	6.4	07 19	00 13	48	60	08 07	01 01	330	327
9	W.Z.C. 615	7.5					07 36	00 26	341	3
9	W.Z.C. 623	7.7					12 07	04 58	338	300
11	W.Z.C. 709	6.8					09 16	01 59	277	297
11	W.Z.C. 747	6.8					04 46	21 26	256	264
15	W.Z.C. 885	7.0					12 33	05 00	291	304
27	W.Z.C. 45	6.8	04 43	20 20	52	18				
28	π Piscium	4.6	04 31	20 04	91	61	05 28	21 01	213	178
29	25 Arietis	6.5	00 14	15 43	82	108	01 18	16 48	216	231
Feb. 1	129 H ¹ Tauri	5.8	10 20	01 40	127	86	11 00	02 19	218	179
2	W.B. (2) V. 1063	6.4	11 51	03 06	101	61				
2	394 B. Tauri	6.0	12 30	03 45	133	95	13 06	04 22	225	189
3	52 B. Geminorum	6.5	09 32	00 44	52	12	10 21	01 33	316	274
3	B.D. +24°1343	6.8	10 37	01 49	36	353				
4	82 Geminorum	6.3	14 24	05 31	162	123	14 49	05 57	221	184
5	γ Cancri	4.7	12 37	03 41	99	58	13 38	04 42	296	254
6	42 Leonis	6.1	07 04	22 01	111	147	08 18	23 14	292	319
7	W.Z.C. 695	7.1					12 29	03 25	344	317
11	ι Virginis	4.4	09 09	23 45	134	171	10 12	24 49	285	318
15	W.Z.C. 1075	7.5					16 13	06 37	279	283
22	W.Z.C. 1578	7.3	03 42	17 37	102	68				
25	W.Z.C. 138	7.3	08 15	21 58	120	81				
25	ξ Arietis	5.5	08 33	22 15	58	19				
27	43 Tauri	5.5	04 38	18 12	44	35	05 43	19 18	277	252
29	5 Geminorum	5.9	06 19	19 45	94	90	07 15	20 41	260	239
Mar. 1	W.Z.C. 498	6.9	07 31	20 53	51	44				
2	35 B. Cancri	6.4	07 36	20 55	89	100	08 52	22 11	296	282

OCCULTATIONS VISIBLE AT GREENWICH.

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Date	Star's Name.	Magnitude.	Disappearance.				Reappearance.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Vertex.			N. Point.	Vertex.
			h m	h m	°	°	h m	h m	°	°
Mar. 5	W.Z.C. 623	7.7	05 51	19 06	112	151				
5	W.Z.C. 709	6.8	04 14	17 21	92	131				
6	W.Z.C. 727	7.3	17 07	06 13	93	54				
13	51 G. Scorpii	6.5					12 26	01 04	275	307
13	W.Z.C. 1054	7.1					14 38	03 16	230	245
15	Piazzi XVII 365	6.7					17 11	05 41	212	220
27	412 B. Tauri	5.8	08 21	20 01	127	91	09 15	20 55	231	190
28	B.D. +25°1571	7.0	12 22	23 57	35	352				
29	B.D. +24°1806	7.0	08 03	19 36	182	178				
29	5 B. Cancri	6.4	10 13	21 45	114	79	11 22	22 54	276	235
30	W.Z.C. 615	7.5	11 08	22 35	75	43				
31	W.Z.C. 623	7.7	15 09	02 36	60	20				
Apr. 2	W.Z.C. 714	6.8	17 28	04 48	179	141				
2	W.Z.C. 747	6.8	09 20	20 37	104	129				
6	W.Z.C. 877	7.1					14 33	01 36	339	330
6	2 Libræ	6.3	09 23	20 23	119	156	10 28	21 29	300	333
6	4 G Libræ	6.5	10 07	21 07	70	104	10 50	21 50	351	22
9	ω ² Scorpii	4.6	16 57	03 48	39	30	17 26	04 17	359	346
10	W.Z.C. 1088	7.0					15 46	02 34	353	3
23	121 Tauri	5.1	09 52	19 45	77	34	10 49	20 43	279	237
24	ε Geminorum	3.2	12 13	22 03	42	0	12 46	22 35	330	289
25	181 B. Geminorum	6.0	09 40	19 26	173	140	10 03	19 49	211	175
25	B.D. +24°1755	6.8	11 32	21 18	101	58				
25	λ Geminorum	3.6	11 49	21 34	59	16	12 33	22 18	328	285
28	W.Z.C. 695	7.1	12 33	22 06	122	95				
29	46 Leonis	5.8	14 37	00 10	66	27	15 16	00 49	349	309
May 2	66 Virginis	5.7					10 17	19 36	294	323
2	W.Z.C. 857	7.2	12 34	21 52	142	151				
2	1 Virginis	4.8	14 40	23 58	101	88	15 52	25 10	324	300
3	96 Virginis	6.5					10 50	20 04	272	301
5	Libræ	5.3	18 31	03 40	78	48				
5	22 Libræ	6.5	18 45	03 54	126	95				
6	λ Libræ	4.9	18 11	03 16	95	73				
7	W.Z.C. 1068	7.6					16 24	01 25	319	321
9	W.Z.C. 1199	6.7					15 10	00 03	337	4
9	68 G. Sagittarii	6.2	18 20	03 14	132	132	19 24	04 17	232	223
9	86 B. Sagittarii	6.5	18 59	03 52	115	110				
10	W.Z.C. 1283	7.4					19 11	04 01	295	296
27	1 Virginis	4.2	11 28	19 08	111	114	12 48	20 27	318	304
June 2	41 Libræ	5.3	19 23	02 41	152	120				

OCCULTATIONS VISIBLE AT GREENWICH.

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Date.	Star's Name.	Magnitude.	Disappearance.				Reappearance.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Vertex.			N. Point.	Vertex.
			h m	h m	°	°	h m	h m	°	°
June 2	W.Z.C. 1054	7.1	14 21	21 37	91	109				
5	Piazz XVII 365	6.7					18 31	01 38	316	312
19	B.D. +24°1806	7.0	14 33	20 42	133	94				
20	W.Z.C. 615	7.5	15 33	21 37	67	28				
22	W.Z.C. 709	6.8	15 45	21 42	68	28				
July 3	B.A.C. 6416	6.8	21 13	02 29	131	109				
5	56 B. Capricorni	6.3	20 08	01 17	84	89	21 27	02 35	243	235
6	W.Z.C. 1439	7.0					22 12	03 17	284	277
8	30 Piscium	4.7					18 57	23 50	282	319
9	33 Piscium	4.8	19 48	00 41	49	84	20 52	01 45	254	283
23	72 Virginis	6.1	16 11	20 06	128	102	17 23	21 18	291	258
29	68 G. Sagittarii	6.2	19 28	22 58	117	107	20 37	24 08	239	219
29	69 G. Sagittarii	6.3	20 09	23 40	169	153	20 22	23 53	188	170
29	86 B. Sagittarii	6.5	20 09	23 39	107	91	21 22	24 52	247	221
30	W.Z.C. 1283	7.4	18 38	22 05	57	63				
Aug. 3	257 B. Aquarii	6.3	19 46	22 57	97	125	20 46	23 57	210	231
8	ξ Arietis	5.5	21 17	00 12	82	121	22 12	01 07	221	258
10	ω Tauri	4.8	22 18	01 05	354	35	22 33	01 20	322	3
10	224 B. Tauri	6.1	00 04	02 50	57	98	01 03	03 50	259	297
10	227 B. Tauri	5.9	00 40	03 26	46	86	01 39	04 26	269	304
12	W.Z.C. 444	6.6					00 32	03 11	285	327
24	W.Z.C. 1104	7.2	17 05	18 55	150	150				
29	143 B. Capricorni	6.1	18 35	20 04	24	51	19 24	20 53	299	320
31	τ Aquarii	4.4	02 23	03 46	88	57	03 17	04 40	213	178
Sept. 1	W.Z.C. 1578	7.3					00 11	01 31	219	212
1	W.Z.C. 1580	6.8					00 55	02 15	159	145
1	B.D. -8°6166	7.0					03 18	04 38	236	204
2	W.B. 0 ^h 398	6.8					03 15	04 31	250	222
2	33 Ceti	6.1					19 40	20 53	251	289
3	f Piscium	5.3	22 50	00 02	24	50	23 48	01 00	269	286
7	W.Z.C. 339	6.7					01 17	02 14	203	244
9	B.D. +25°1571	7.0					00 09	00 58	207	245
19	10 G. Scorpii	5.9					18 04	18 10	344	324
28	290 B. Aquarii	6.3	01 34	01 03	358	336	02 11	01 40	287	260
28	W.Z.C. 1600	6.8	20 48	20 18	22	51				
28	30 Piscium	4.7	21 50	21 20	116	138	22 27	21 57	180	196
29	W.Z.C. 45	6.8					20 17	19 44	198	234
30	B.D. +1°203	7.0					05 27	04 53	232	196
Oct. 1	33 Arietis	5.7	19 41	19 00	29	66	20 22	19 40	281	320
2	26 B. Tauri	6.4	20 09	19 23	6	42	20 31	19 46	311	348

OCCULTATIONS VISIBLE AT GREENWICH.

The Angles are reckoned from the North Point and Vertex of the Moon's limb towards the East

Date.	Star's Name.	Magnitude.	Disappearance.				Reappearance.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Vertex.			N. Point.	Vertex.
			h m	h m	°	°	h m	h m	°	°
Oct. 4	W.Z.C. 328	6.6					05 37	04 47	280	266
5	W.Z.C. 395	7.2					01 12	00 19	211	254
5	W.Z.C. 401	7.7					03 59	03 05	238	269
6	Lul. 13125	7.0					01 20	00 23	333	16
6	W.Z.C. 474	6.6					01 58	01 01	292	336
6	37 Geminorum	5.7	02 39	01 41	144	187	03 12	02 14	205	247
6	40 Geminorum	6.3	04 43	03 44	23	59	05 14	04 16	332	2
10	W.Z.C. 709	6.8					06 44	05 30	260	298
19	66 B. Sagittari	4.7	21 11	19 19	103	77				
24	B.D. - 15°6265	7.0	21 42	19 31	92	102				
24	69 Aquarii	5.6	00 01	21 48	67	54	01 10	22 58	230	207
24	7 Aquarii	4.4	01 28	23 16	32	7	02 27	24 14	266	235
25	W.Z.C. 1578	7.3	22 14	19 58	38	51				
25	W.Z.C. 1580	6.8	23 26	21 10	78	79				
25	B.D. - 8°6166	7.0	01 32	23 15	26	7				
26	W.B. ch 398	6.5	01 05	22 44	23	16				
27	f Piscium	5.3	21 08	18 44	19	55	21 54	19 30	279	311
30	W.Z.C. 204	7.2					08 43	06 10	248	207
30	53 Tauri	5.3	00 46	22 10	84	124	01 46	23 10	230	264
31	B.D. + 23°888	7.0					23 25	20 45	266	307
Nov. 5	57 B. Leonis	6.5	08 31	05 34	52	71	09 08	06 11	355	4
7	B.D. + 9°2482	7.0					07 50	04 45	304	339
15	W.Z.C. 1158	7.3	19 17	15 39	90	77				
18	W.Z.C. 1372	6.7	20 40	16 50	55	54				
19	35 Capricorni	6.0					20 10	16 16	292	304
22	30 Piscium	4.7	21 49	17 43	85	107	22 52	18 46	208	219
23	W.Z.C. 45	6.8	20 25	16 15	92	128				
24	B.D. + 1°203	7.0	05 33	01 22	64	28				
25	31 Arctis	5.7	20 31	16 14	41	80	21 20	17 03	266	306
26	W.Z.C. 180	7.3	08 44	04 25	116	76				
26	26 B. Tauri	6.4					20 51	16 30	285	323
27	W.Z.C. 244	6.9	08 28	04 05	81	40				
27	W.Z.C. 328	6.6					03 48	23 23	265	284
28	W.Z.C. 401	7.7					00 47	20 16	251	294
29	W.Z.C. 414	7.0					05 23	00 50	231	243
29	37 Geminorum	5.7					23 03	18 29	243	277
29	W.Z.C. 489	7.0					04 33	23 59	273	311
30	W.Z.C. 495	6.9					06 05	01 31	277	298
Dec. 1	2 Cancri	5.9	06 35	01 56	55	84	07 37	02 58	327	340
2	η Leonis	3.6	02 41	21 55	84	120	03 32	22 46	306	345

OCCULTATIONS, 1928.

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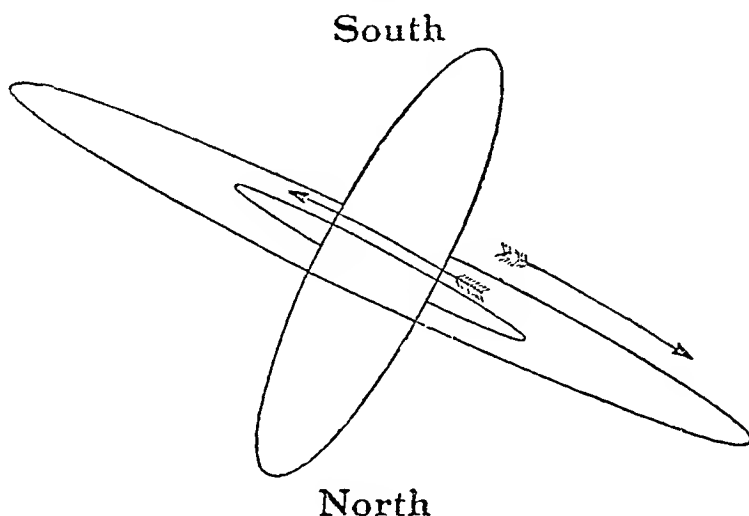
OCCULTATIONS VISIBLE AT GREENWICH.

* * The Angles are reckoned from the North Point and Vertex of the Moon's limb towards the East.

Date.	Star's Name	Magnitude.	Disappearance.				Reappearance.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Vertex.			N. Point.	Vertex.
Dec. 3	42 Leonis	6.1	h m	h m	°	°	h m	h m	°	°
3	B.D. +12°2284	6.8	11 23	06 36	194	178	11 43	06 56	226	205
7	72 Virginis	6.1	12 07	07 03	88	102	04 11	23 20	331	9
20	W.B. 0 ^h 398	6.8	23 16	17 20	349	2				
21	W.Z.C. 83	7.3	03 19	21 19	358	336				
22	W.Z.C. 140	7.5	06 03	23 59	30	353				
24	W.Z.C. 204	7.2	09 52	03 43	71	33				
24	51 Tauri	5.6	03 24	21 11	17	32	04 08	21 55	300	302
24	53 Tauri	5.3	04 00	21 48	168	172	04 02	21 49	170	174
25	B.D. +23°888	7.0	00 21	18 06	89	132				
26	W.Z.C. 395	7.2	13 25	07 08	151	117				
27	Lalande 13125	7.0					12 30	06 10	305	263
27	W.Z.C. 474	6.6					12 54	06 34	289	248
27	37 Geminorum	5.7	13 21	06 58	124	84	14 04	07 42	250	213
29	W.Z.C. 609	7.6					09 06	02 37	341	336
29	B.D. +19°2254	7.0					05 03	22 31	346	27
31	W.Z.C. 709	6.8					08 56	02 19	270	294

SATELLITES OF MARS, 1928.

APPARENT ORBITS OF THE SATELLITES OF MARS AT DATE OF OPPOSITION, DEC. 21, 1928, AS SEEN IN AN INVERTING TELESCOPE AND ELONGATED IN THE RATIO OF FOUR TO ONE IN THE DIRECTION OF THEIR MINOR AXES.



GREENWICH MEAN TIME OF GREATEST ELONGATION.

PHOBOS.			DEIMOS.		
	d h		d h		d h
Oct 19 21.9 E.		Nov 13 11.3 E.	Oct. 11 05.7 E.		Nov. 21 22.0 E.
21 00.7 W.		14 14.1 W.	13 03.1 W.		23 19.4 W.
22 03.5 E.		15 16.9 E.	15 00.7 E.		25 16.8 E.
23 16.3 W.		16 19.7 W.	16 22.1 W.		27 14.3 W.
24 09.1 E.		17 22.4 E.	18 19.7 E.		29 11.7 E.
25 11.9 W.		19 01.2 W.	20 17.1 W.	Dec. 1 09.1 W.	
26 14.7 E.		20 04.0 E.	22 14.6 E.	3 06.5 E.	
27 17.4 W.		21 06.8 W.	24 12.1 W.	5 04.0 W.	
28 20.2 E.		22 09.6 E.	26 09.6 E.	7 01.3 E.	
29 23.0 W.		23 12.4 W.	28 07.0 W.	8 22.8 W.	
31 01.8 E.		24 15.2 E.	30 04.6 E.	10 20.1 E.	
Nov. 1 04.6 W.		25 18.0 W.	Nov. 1 02.0 W.	12 17.6 W.	
2 07.4 E.		26 20.7 E.	2 23.5 E.	14 14.9 E.	
3 10.2 W.		27 23.5 W.	4 21.0 W.	16 12.4 W.	
4 13.0 E.		29 02.3 E.	6 18.4 E.	18 09.7 E.	
5 15.8 W.		30 05.1 W.	8 15.9 W.	20 07.1 W.	
6 18.6 E.	Dec. 1 07.9 E.	25 21.0 E.	10 13.3 E.	22 04.5 E.	
7 21.4 W.	2 10.7 W.	26 23.8 W.	12 10.8 W.	24 01.9 W.	
9 00.2 E.	3 13.4 E.	28 02.6 E.	14 08.2 E.	25 23.3 E.	
10 02.9 W.	4 16.2 W.	29 05.4 W.	16 05.7 W.	27 20.7 W.	
11 05.7 E.	5 19.0 E.	30 08.2 E.	18 03.1 E.	29 18.1 E.	
12 08.5 W.	6 21.8 W.	31 11.0 W.	20 00.6 W.	31 15.5 W.	

For Phobos every seventh eastern and western elongation is given, and for Deimos every third; the intermediate ones may be found by adding multiples of the period of the satellite.

Sidereal period of Phobos, $7^h 39^m 13^s.85$. Sidereal period of Deimos, $30^h 17^m 54^s.87$.

SATELLITES OF MARS, 1928.

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Time from Eastern Elongation	Phobos.		Time from Eastern Elongation.	Deimos.		oh Greenwich Mean Time.	Phobos.		Deimos.	
	p^1	F		p^1	F		$P-P_0$	$\frac{a(p)}{p}$	$P-P_0$	$\frac{a(p)}{p}$
h m	°		h m	°						
0 00	64.0	1.000	0 00	64.0	1.000	Nov. 12	+3.7	18.9	+6.0	47.4
0 10	64.1	0.991	0 40	63.8	0.990	13	3.7	19.1	6.0	47.7
0 20	64.3	0.963	1 20	63.6	0.962	14	3.7	19.2	6.0	48.1
0 30	64.4	0.917	2 00	63.4	0.915	15	3.7	19.4	6.0	48.4
0 40	64.6	0.854	2 40	63.2	0.851	16	3.6	19.5	6.0	48.8
0 50	64.8	0.775	3 20	62.9	0.771	17	+3.6	19.6	+5.9	49.1
1 00	65.0	0.682	4 00	62.6	0.676	18	3.6	19.8	5.9	49.5
1 10	65.4	0.575	4 40	62.1	0.568	19	3.6	19.9	5.8	49.8
1 20	65.9	0.459	5 20	61.4	0.449	20	3.5	20.0	5.8	50.2
1 30	66.7	0.333	6 00	60.1	0.321	21	3.4	20.2	5.7	50.5
1 40	68.7	0.202	6 40	57.1	0.189	22	+3.4	20.3	+5.7	50.8
1 50	78.4	0.068	7 20	39.3	0.055	23	3.3	20.4	5.6	51.1
2 00	230.6	0.073	8 00	258.6	0.091	24	3.2	20.6	5.5	51.5
2 10	239.4	0.207	8 40	249.7	0.226	25	3.1	20.7	5.4	51.8
2 20	241.3	0.338	9 20	247.5	0.357	26	3.0	20.8	5.3	52.1
2 30	242.1	0.463	10 00	246.4	0.482	27	+2.9	20.9	+5.2	52.4
2 40	242.6	0.580	10 40	245.8	0.598	28	2.8	21.0	5.1	52.6
2 50	243.0	0.685	11 20	245.3	0.703	29	2.7	21.1	5.0	52.9
3 00	243.2	0.778	12 00	245.0	0.794	30	2.6	21.2	4.8	53.2
3 10	243.4	0.857	12 40	244.7	0.870	Dec. 1	2.4	21.3	4.7	53.4
3 20	243.6	0.919	13 20	244.5	0.930	2	+2.3	21.4	+4.6	53.7
3 30	243.7	0.964	14 00	244.3	0.972	3	2.1	21.5	4.4	53.9
3 40	243.9	0.991	14 40	244.1	0.995	4	2.0	21.6	4.3	54.1
3 50	244.0	1.000	15 20	244.0	0.999	5	1.8	21.7	4.1	54.3
4 00	244.1	0.990	16 00	243.8	0.984	6	1.6	21.8	4.0	54.5
4 10	244.3	0.961	16 40	243.6	0.951	7	+1.5	21.8	+3.8	54.6
4 20	244.4	0.915	17 20	243.4	0.899	8	1.3	21.9	3.6	54.8
4 30	244.6	0.851	18 00	243.1	0.830	9	1.1	22.0	3.5	54.9
4 40	244.8	0.772	18 40	242.8	0.746	10	0.9	22.0	3.3	55.0
4 50	245.1	0.678	19 20	242.4	0.647	11	0.7	22.0	3.1	55.1
5 00	245.4	0.571	20 00	241.9	0.536	12	+0.6	22.1	+2.9	55.2
5 10	245.9	0.454	20 40	241.1	0.414	13	0.4	22.1	2.7	55.3
5 20	246.8	0.328	21 20	239.6	0.285	14	+0.2	22.1	2.5	55.3
5 30	248.8	0.197	22 00	235.3	0.151	15	0.0	22.1	2.3	55.3
5 40	259.6	0.063	22 40	181.3	0.025	16	-0.2	22.1	2.1	55.3
5 50	51.5	0.078	23 20	74.3	0.128	17	-0.4	22.1	+2.0	55.3
6 00	59.5	0.212	24 00	68.9	0.262	18	0.6	22.1	1.8	55.3
6 10	61.3	0.343	24 40	67.1	0.393	19	0.8	22.1	1.6	55.2
6 20	62.2	0.468	25 20	66.2	0.516	20	1.0	22.0	1.4	55.2
6 30	62.7	0.584	26 00	65.6	0.629	21	1.2	22.0	1.2	55.1
6 40	63.0	0.689	26 40	65.2	0.730	22	-1.4	22.0	+1.0	54.9
6 50	63.2	0.782	27 20	64.9	0.817	23	1.6	21.9	0.8	54.8
7 00	63.4	0.859	28 00	64.7	0.889	24	1.8	21.8	0.6	54.7
7 10	63.6	0.921	28 40	64.5	0.943	25	2.0	21.8	0.4	54.5
7 20	63.7	0.966	29 20	64.3	0.980	26	2.2	21.7	0.3	54.3
7 30	63.9	0.992	30 00	64.1	0.998	27	-2.4	21.6	+0.1	54.1
7 40	64.0	1.000	30 40	63.9	0.997	28	2.6	21.5	-0.1	53.8
						29	2.7	21.4	0.2	53.6
						30	2.9	21.3	0.4	53.3
						31	3.1	21.2	0.6	53.1
						32	-3.2	21.1	-0.7	52.8

Position angle of satellite $p = p^1 + (P - P_0)$.

Apparent distance of satellite $s = F \frac{a(p)}{p}$.

SATELLITES OF JUPITER, 1928.

MEAN SYNODIC PERIODS OF THE SATELLITES.

$$V. \text{ } 0^{\text{d}} 11^{\text{h}} 57^{\text{m}} 27^{\text{s}}.6 = 0^{\text{d}}.498236$$

$$\begin{array}{l} \text{I. } 1^{\text{d}} 1^{\text{h}} 28^{\text{m}} 35^{\text{s}}.94619 = 1.7692604883 \\ \text{II. } 3^{\text{d}} 13^{\text{h}} 17^{\text{m}} 53^{\text{s}}.73665 = 3.5540941742 \end{array} \quad \begin{array}{l} \text{III. } 7^{\text{d}} 03^{\text{h}} 59^{\text{m}} 35^{\text{s}}.85660 = 7.1663872292 \\ \text{IV. } 16^{\text{d}} 18^{\text{h}} 05^{\text{m}} 06^{\text{s}}.91878 = 16.7535523007 \end{array}$$

SATELLITE V.

MEAN TIME OF EVERY TWENTIETH GREATEST ELONGATION.

	d	h			d	h			d	h			d	h		
July	15	13.1	E.	Oct.	13	05.1	E.	July	15	19.1	W.	Oct.	13	11.1	W.	
	25	12.3	E.		23	04.2	E.		25	18.2	W.		23	10.2	W.	
Aug.	4	11.4	E.	Nov.	2	03.3	E.	Aug.	4	17.4	W.	Nov.	2	09.3	W.	
	14	10.5	E.		12	02.4	E.		14	16.5	W.		12	08.4	W.	
	24	09.6	E.		22	01.5	E.		24	15.6	W.		22	07.4	W.	
Sept.	3	08.8	E.	Dec.	2	00.6	E.	Sept.	3	14.7	W.	Dec.	2	06.6	W.	
	13	07.9	E.		11	23.7	E.		13	13.8	W.		12	05.7	W.	
	23	07.0	E.		21	22.8	E.		23	12.9	W.		22	04.8	W.	
Oct	3	06.0	E.		31	22.0	E.	Oct.	3	12.0	W.		32	04.0	W.	

MEAN TIME OF SUPERIOR GEOCENTRIC CONJUNCTION.

SATELLITE I. (Io).

	d	h	m		d	h	m		d	h	m		d	h	m	
Jan.	1	04	43.8	Feb.	5	14	40.3	Mar.	12	00	47.6	May	16	13	34.2	
	2	23	13.2		7	09	10.5		13	19	18.1		18	08	04.4	
	4	17	42.7		9	03	40.7		15	13	48.6		20	02	34.6	
	6	12	12.2		10	22	10.9		17	08	19.1		21	21	04.9	
	8	06	41.8		12	16	41.2		19	02	49.6		23	15	35.0	
	10	01	11.4		14	11	11.5		20	21	20.1		25	10	05.2	
	11	19	41.0		16	05	41.8		22	15	50.7		27	04	35.2	
	13	14	10.8		18	00	12.1		24	10	21.2		28	23	05.4	
	15	08	40.5		19	18	42.4		26	04	51.7		30	17	35.4	
	17	03	10.3		21	13	12.8		27	23	22.2	June	1	12	05.5	
	18	21	40.1		23	07	43.2		29	17	52.7		3	06	35.5	
	20	16	10.0		25	02	13.6		31	12	23.3		5	01	05.5	
	22	10	39.9		26	20	44.0						6	19	35.4	
	24	05	09.8		28	15	14.4						8	14	05.4	
	25	23	30.8	Mar.	1	09	44.8						10	08	35.2	
	27	18	00.8		3	04	15.3						12	03	05.2	
	29	12	30.8		4	22	45.7						13	21	35.0	
	31	07	00.0		6	17	16.2						15	16	04.8	
Feb.	2	01	40.0		8	11	46.6						17	10	34.5	
	3	20	10.2		10	06	17.1						19	05	04.3	

SATELLITES OF JUPITER, 1928.

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MEAN TIME OF SUPERIOR GEOCENTRIC CONJUNCTION.

SATELLITE I. (Io)—*continued*.

	d	h	m		d	h	m		d	h	m		d	h	m
June	20	23	34.0	Aug.	9	13	06.8	Sept.	28	01	50.6	Nov.	16	13	59.8
	22	18	03.7		11	07	35.1		29	20	17.0		18	08	26.1
	24	12	33.2		13	02	03.1	Oct.	1	14	43.2		20	02	52.4
	26	07	02.9		14	20	31.3		3	09	09.5		21	21	18.7
	28	01	32.4		16	14	59.2		5	03	35.7		23	15	45.1
	29	20	01.9		18	09	27.2		6	22	01.9		25	10	11.6
July	1	14	31.3		20	03	55.0		8	16	27.9		27	04	38.1
	3	09	00.8		21	22	22.9		10	10	54.0		28	23	04.8
	5	03	30.1		23	16	50.6		12	05	20.0		30	17	31.4
	6	21	59.5		25	11	18.3		13	23	46.1	Dec.	2	11	58.2
	8	16	28.7		27	05	45.8		15	18	12.0		4	06	25.0
	10	10	58.0		29	00	13.4		17	12	38.0		6	00	51.9
	12	05	27.2		30	18	40.8		19	07	03.9		7	19	18.8
	13	23	56.4	Sept.	1	13	08.2		21	01	29.9		9	13	45.9
	15	18	25.4		3	07	35.5		22	19	55.7		11	08	13.0
	17	12	54.5		5	02	02.8		24	14	21.7		13	02	40.2
	19	07	23.4		6	20	29.9		26	08	47.6		14	21	07.4
	21	01	52.4		8	14	57.0		28	03	13.6		16	15	34.8
	22	20	21.2		10	09	24.0		29	21	39.4		18	10	02.2
	24	14	50.1		12	03	51.0		31	16	05.4		20	04	29.7
	26	09	18.8		13	22	17.8	Nov.	2	10	31.3		21	22	57.3
	28	03	47.6		15	16	44.7		4	04	57.3		23	17	25.0
	29	22	16.1		17	11	11.4		5	23	23.2		25	11	52.7
	31	16	44.8		19	05	38.1		7	17	49.3		27	06	20.6
Aug.	2	11	13.3		21	00	04.7		9	12	15.3		29	00	48.4
	4	05	41.8		22	18	31.3		11	06	41.4		30	19	16.5
	6	00	10.2		24	12	57.8		13	01	07.4		32	13	44.5
	7	18	38.6		26	07	24.3		14	19	33.7				

SATELLITE II. (EUROPA).

	d	h	m		d	h	m		d	h	m		d	h	m
Jan.	4	10	59.4	Feb.	9	00	56.1	Mar.	15	15	17.7	May	15	03	45.6
	8	00	21.7		12	14	21.9		19	04	44.9		18	17	10.5
	11	13	43.7		16	03	47.1		22	18	11.2		22	06	35.6
	15	03	06.9		19	17	13.3		26	07	38.4		25	20	00.0
	18	16	29.7		23	06	38.9		29	21	04.8		29	09	24.5
	22	05	53.7		26	20	05.5					June	1	22	48.5
	25	19	17.2	Mar.	1	09	31.4						5	12	12.5
	29	08	41.9		4	22	58.3						9	01	35.8
Feb.	1	22	06.0		8	12	24.4						12	14	59.2
	5	11	31.3		12	01	51.5						16	04	22.0

SATELLITES OF JUPITER, 1928.

MEAN TIME OF SUPERIOR GEOCENTRIC CONJUNCTION.

SATELLITE II. (EUROPA)—*continued*.

	d	h	m		d	h	m		d	h	m		d	h	m
June	19	17	44.7	Aug.	8	12	17.7	Sept.	27	05	08.3	Nov.	15	20	45.3
	23	07	06.8		12	01	33.6		30	18	16.5		19	09	52.9
	26	20	28.7		15	14	48.9	Oct.	4	07	24.3		22	23	00.9
	30	09	50.2		19	04	03.7		7	20	31.7		26	12	09.4
July	3	23	11.3		22	17	17.8		11	09	38.8		30	01	18.4
												Dec.	3	14	27.9
	7	12	32.0		26	06	31.5		14	22	45.6		7	03	38.1
	11	01	52.3		29	19	44.5		18	11	52.2		10	16	48.8
	14	15	12.1	Sept.	2	08	56.9		22	00	58.7		14	06	00.2
	18	04	31.5		5	22	08.8		25	14	05.0		17	19	12.2
	21	17	50.4		9	11	20.1		29	03	11.4				
								Nov.	1	16	17.8		21	08	24.8
	25	07	08.9		13	00	30.9		5	05	24.3		24	21	38.2
	28	20	26.9		16	13	41.0		8	18	31.0		28	10	52.1
Aug.	1	09	44.3		20	02	50.6		12	07	38.0		32	00	06.8
	4	23	01.3		23	15	59.7								

SATELLITE III. (GANYMEDE).

	d	h	m		d	h	m		d	h	m		d	h	m
Jan.	2	03	06.5					July	14	02	23.4	Oct.	15	02	35.8
	9	07	19.1						21	06	31.1		22	05	51.3
	16	11	35.0						28	10	35.7		29	09	06.1
	23	15	54.4					Aug.	4	14	36.3	Nov.	5	12	21.5
	30	20	16.0						11	18	33.3		12	15	38.2
Feb.	7	00	40.0	May	17	15	41.7		18	22	25.0		19	18	57.8
	14	05	05.4		24	20	08.6		26	02	12.1		26	22	19.9
	21	09	32.5	June	1	00	34.0	Sept.	2	05	54.0	Dec.	4	01	46.0
	28	14	01.2		8	04	58.1		9	09	31.3		11	05	16.3
Mar.	6	18	31.2		15	09	20.3		16	13	04.3		18	08	51.5
	13	23	02.6		22	13	40.8		23	16	32.7		25	12	32.3
	21	03	34.0		29	17	57.9		30	19	57.5		32	16	18.3
	28	08	06.0	July	6	22	12.4	Oct.	7	23	18.0				

SATELLITE IV. (CALLISTO).

	d	h	m		d	h	m		d	h	m		d	h	m
Jan.	10	13	42.0	May	24	11	06.5	Aug.	16	11	24.9	Nov.	7	15	16.2
	27	09	28.1	June	10	07	31.6	Sept.	2	04	15.4		24	05	38.4
Feb.	13	05	45.4		27	03	30.1		18	20	04.6	Dec.	10	20	46.3
Mar.	1	02	26.1	July	13	22	54.5	Oct.	5	10	58.2		27	12	54.9
	17	23	20.8		30	17	35.5		22	01	12.9				

JANUARY

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
0	I. Tr. c.	06 17	7	I. Sh. f.	11 44	16	I. Tr. c.	04 44	23	III. E. f.	21 47.0
	I. Sh. c.	07 36		II. Im.	23 02		I. Sh. c.	05 57		II. Tr. c.	23 36
	I. Tr. f.	08 31					I. Tr. f.	06 58			
	I. Sh. f.	09 48	8	II. Em.	01 41		I. Sh. f.	08 09	24	II. Sh. c.	01 54
	II. Im.	20 17		II. E. c.	01 41.4		III. Im.	10 07		II. Tr. f.	02 12
	II. Em.	22 58		II. E. f.	04 13.3		III. Em.	13 03		I. Im.	04 03
	II. E. c.	23 02.6		I. Im.	05 34		III. E. c.	15 11.0		II. Sh. f.	04 22
1				I. E. f.	09 04.2		III. E. f.	17 45.1		I. E. f.	07 23.7
	II. E. f.	01 34.9	9	I. Tr. c.	02 45		II. Tr. c.	20 51	25	I. Tr. c.	01 14
	I. Im.	03 37		I. Sh. c.	04 01		II. Sh. c.	23 17		I. Sh. c.	02 22
	I. E. f.	07 08.8		I. Tr. f.	04 59		II. Tr. f.	23 27		I. Tr. f.	03 28
2	I. Tr. c.	00 47		III. Im.	05 50	17	II. Sh. f.	01 46		I. Sh. f.	04 34
	III. Im.	01 38		I. Sh. f.	06 13		I. Im.	02 03		II. Im.	17 58
	I. Sh. c.	02 05		III. Em.	08 48		I. E. f.	05 28.4		I. Im.	22 33
	I. Tr. f.	03 00		III. E. c.	11 08.3		I. Tr. c.	23 14		II. E. f.	22 49.3
	I. Sh. f.	04 17		III. E. f.	13 43.6	18	I. Sh. c.	00 26	26	I. E. f.	01 52.5
	IV. Tr. c.	04 24		II. Tr. c.	18 08		I. Tr. f.	01 28		I. Tr. c.	19 44
	III. Em.	04 35		II. Sh. c.	20 41		I. Tr. f.	02 38		I. Sh. c.	20 51
	IV. Tr. f.	06 54		II. Tr. f.	20 44		II. Im.	15 10		I. Tr. f.	21 58
	III. E. c.	07 05.8		II. Sh. f.	23 10		II. E. f.	20 10.7		I. Sh. f.	23 03
	III. E. f.	09 42.3	10	I. Im.	00 04		I. Im.	20 33	27	III. Tr. c.	04 32
	II. Tr. c.	15 26		I. E. f.	03 33.0		IV. Tr. c.	23 56		III. Tr. f.	07 25
	II. Tr. f.	18 03		IV. Im.	12 27		I. E. f.	23 57.2		IV. Im.	08 17
	II. Sh. c.	18 04		IV. Em.	14 59	19	IV. Tr. f.	02 18		III. Sh. c.	09 11
	II. Sh. f.	20 33		I. Tr. c.	21 15		I. Tr. c.	17 44		IV. Em.	10 39
	I. Im.	22 06		I. Sh. c.	22 30		I. Sh. c.	18 55		III. Sh. f.	11 41
3	I. E. f.	01 37.6		I. Tr. f.	23 28		I. Tr. f.	19 58		II. Tr. c.	12 59
	I. Tr. c.	19 16	11	I. Sh. f.	00 42		I. Sh. f.	21 07		II. Sh. c.	15 12
	I. Sh. c.	20 34		II. Im.	12 24					II. Tr. f.	15 34
	I. Tr. f.	21 30		II. E. f.	17 32.2	20	III. Tr. c.	00 11		I. Im.	17 03
	I. Sh. f.	22 46		I. Im.	18 34		III. Tr. f.	03 06		II. Sh. f.	17 40
4	II. Im.	09 40		I. E. f.	22 01.9		III. Sh. c.	05 09		I. E. f.	20 21.3
	II. Em.	12 19	12	I. Tr. c.	15 44		III. Sh. f.	07 40	28	I. Tr. c.	14 14
	II. E. c.	12 21.6		I. Sh. c.	16 59		II. Tr. c.	10 14		I. Sh. c.	15 20
	II. E. f.	14 53.7		I. Tr. f.	17 58		II. Sh. c.	12 36		I. Tr. f.	16 28
	I. Im.	16 35		I. Sh. f.	19 11		II. Tr. f.	12 49		I. Sh. f.	17 32
	I. E. f.	20 06.5		III. Tr. c.	19 53		I. Im.	15 03	29	II. Im.	07 23
5	I. Tr. c.	13 46		III. Tr. f.	22 48		II. Sh. f.	15 04		I. Im.	11 33
	I. Sh. c.	15 03	13	III. Sh. c.	01 06	21	I. E. f.	18 26.0		II. E. f.	12 09.0
	III. Tr. c.	15 38		III. Sh. f.	03 38		I. Tr. c.	12 14		I. E. f.	14 50.1
	I. Tr. f.	15 59		II. Tr. c.	07 30		I. Sh. c.	13 24	30	I. Tr. c.	08 45
	I. Sh. f.	17 15		II. Sh. c.	09 59		I. Tr. f.	14 28		I. Sh. c.	09 49
	III. Tr. f.	18 33		II. Tr. f.	10 06		I. Sh. f.	15 36		I. Tr. f.	10 59
	III. Sh. c.	21 02		II. Sh. f.	12 28	22	II. Im.	04 34		I. Sh. f.	12 01
	III. Sh. f.	23 36		I. Im.	13 04		II. E. f.	09 30.4		III. Im.	18 49
6	II. Tr. c.	04 47		I. E. f.	16 30.7		I. Im.	09 33		III. Em.	21 43
	II. Sh. c.	07 23	14	I. Tr. c.	10 14		I. E. f.	12 54.9		III. E. c.	23 16.8
	II. Tr. f.	07 23		I. Sh. c.	11 28	23	I. Tr. c.	06 44	31	III. E. f.	01 48.3
	II. Sh. f.	09 52		I. Tr. f.	12 28		I. Sh. c.	07 53		II. Tr. c.	02 22
	I. Im.	11 05		I. Sh. f.	13 40		I. Tr. f.	08 58		II. Sh. c.	04 30
	I. E. f.	14 35.3	15	II. Im.	01 47		I. Sh. f.	10 05		II. Tr. f.	04 57
7	I. Tr. c.	08 15		II. E. f.	06 51.8		III. Im.	14 27		I. Im.	06 03
	I. Sh. c.	09 32		I. Im.	07 33		III. Em.	17 22		II. Sh. f.	06 58
	I. Tr. f.	10 29		I. E. f.	10 59.6		III. E. c.	19 14.3		I. E. f.	09 18.9

Eclipse commences - - E. c.
 „ finishes - - E. f.

Transit commences - - Tr. c.
 „ finishes - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - Em.

Shadow commences - - Sh. c.
 „ finishes - - Sh. f.

SATELLITES OF JUPITER, 1928.

JANUARY.

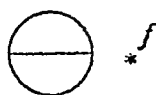
MEAN TIME.

Configurations at 19^h 00^m.

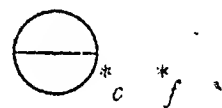
Day.	West.	East.
0	1. 3. 1. 2.	4.
1	3. 1.	4. 2.
2	4. 2. 1.	3.
3	4. 2. 1.	3.
4	4.	2. 3.
5	4.	1. 3. 2.
6	4. 3. 2.	1.
7	4. 3. 1. 2.	
8	4. 3.	1. 2.
9	4. 1.	3.
10	2.	1. 3.
11	1. 2.	3. 4.
12	3. 2. 1.	2. 4.
13	3. 2. 1.	1. 4.
14	3. 1. 2.	4.
15	3.	1. 2. 4.
16	1. 2. 3.	4.
17	2.	1. 4. 3.
18	1. 2.	3.
19	1. 4. 3. 2.	
20	4. 3. 2. 1.	
21	4. 3. 1. 2.	
22	4. 3. 1. 2.	
23	4. 1. 2. 3.	
24	4. 2. 1. 3.	
25	1. 4. 3.	
26	4. 1. 3. 2.	
27	3. 2. 1. 4.	
28	3. 2. 1.	4.
29	3.	1. 2. 4.
30	1. 2. 3.	4.
31	2.	1. 3. 4.

PHASES OF THE ECLIPSES.

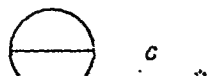
I.



II.



III.



IV.

No Eclipse of this Satellite.

SATELLITES OF JUPITER, 1928.

515

FEBRUARY.

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
1	I. Tr. c.	03 15	8	I. Tr. c.	05 16	15	I. Tr. c.	07 18	22	I. Tr. c.	09 20
	I. Sh. c.	04 18		I. Sh. c.	06 14		I. Sh. c.	08 10		I. Sh. c.	10 06
	I. Tr. f.	05 29		I. Tr. f.	07 30		I. Tr. f.	09 32		I. Tr. f.	11 34
	I. Sh. f.	06 30		I. Sh. f.	08 26		I. Sh. f.	10 22		I. Sh. f.	12 18
	II. Im.	20 47		II. Im.	23 37				23	II. Im.	05 21
2	I. Im.	00 33	9	I. Im.	02 34	16	II. Im.	02 28		I. Im.	06 36
	II. E. f.	01 27.9		II. E. f.	04 06.5		I. Im.	04 35		II. E. f.	09 23.6
	I. E. f.	03 47.7		I. E. f.	05 42.8		II. E. f.	06 45.0		I. E. f.	09 32.9
	I. Tr. c.	21 45		I. Tr. c.	23 46		I. E. f.	07 37.9	24	I. Tr. c.	03 50
	I. Sh. c.	22 47				17				I. Sh. c.	04 35
	I. Tr. f.	23 59					I. Tr. c.	01 48		I. Tr. f.	06 05
3	I. Sh. f.	00 59	10	I. Sh. c.	00 43		I. Sh. c.	02 39		I. Sh. f.	06 47
	III. Tr. c.	08 55		I. Tr. f.	02 01		I. Tr. f.	04 03		III. Tr. c.	22 19
	III. Tr. f.	11 48		I. Sh. f.	02 55		I. Sh. f.	04 51	25	II. Tr. c.	00 09
	III. Sh. c.	13 14		III. Tr. c.	13 21		III. Tr. c.	17 49		I. Im.	01 07
	III. Sh. f.	15 43		III. Tr. f.	16 12		III. Tr. f.	20 39		III. Tr. f.	01 07
	II. Tr. c.	15 45		III. Sh. c.	17 17		II. Tr. c.	21 20		III. Sh. c.	01 23
	II. Sh. c.	17 48		II. Tr. c.	18 32		III. Sh. c.	21 20		II. Sh. c.	01 36
	II. Tr. f.	18 20		II. Sh. f.	19 45		II. Sh. c.	23 00		II. Tr. f.	02 43
	I. Im.	19 03		I. Im.	21 04		I. Im.	23 05		III. Sh. f.	03 49
	II. Sh. f.	20 16		II. Tr. f.	21 07		III. Sh. f.	23 47		I. E. f.	04 01.6
	I. E. f.	22 16.5		II. Sh. f.	22 51		II. Tr. f.	23 54		II. Sh. f.	04 03
4	I. Tr. c.	16 15	11	I. E. f.	00 11.6	18	II. Sh. f.	01 27		I. Tr. c.	22 21
	I. Sh. c.	17 16		I. Tr. c.	18 17		I. E. f.	02 06.6		I. Tr. c.	23 03
	I. Tr. f.	18 30		I. Sh. c.	19 12		I. Tr. c.	20 19	26	I. Tr. f.	00 35
	I. Sh. f.	19 28		I. Tr. f.	20 31		I. Sh. c.	21 08		I. Sh. f.	01 16
	IV. Tr. c.	20 11		I. Sh. f.	21 24		I. Tr. f.	22 33		II. Im.	18 48
	IV. Tr. f.	22 16					I. Sh. f.	23 20		I. Im.	19 37
5	II. Im.	10 12	12	II. Im.	13 03	19	II. Im.	15 55		I. E. f.	22 30.4
	I. Im.	13 33		I. Im.	15 34		I. Im.	17 36	27	II. E. f.	22 43.3
	II. E. f.	14 47.6		II. E. f.	17 26.2		II. E. f.	20 04.8		I. Tr. c.	16 52
	I. E. f.	16 45.3		I. E. f.	18 40.4		I. E. f.	20 35.4		I. Sh. c.	17 32
6	I. Tr. c.	10 46	13	IV. Im.	04 45	20	I. Tr. c.	14 49		I. Tr. f.	19 06
	I. Sh. c.	11 45		IV. Em.	06 45		I. Sh. c.	15 37		I. Sh. f.	19 45
	I. Tr. f.	13 00		I. Tr. c.	12 47		I. Tr. f.	17 04	28	III. Im.	12 37
	I. Sh. f.	13 57		I. Sh. c.	13 41		I. Sh. f.	17 49		II. Tr. c.	13 34
	III. Im.	23 13		I. Tr. f.	15 02					I. Im.	14 08
				I. Sh. f.	15 53					II. Sh. c.	14 54
7	III. Em.	02 06	14	III. Im.	03 40	21	III. Im.	08 08		III. Em.	15 25
	III. E. c.	03 19.4		III. Em.	06 31		II. Tr. c.	10 45		III. E. c.	15 25.5
	II. Tr. c.	05 09		III. E. c.	07 21.5		III. Em.	10 58		II. Tr. f.	16 07
	III. E. f.	05 49.7		II. Tr. c.	07 56		III. E. c.	11 23.4		I. E. f.	16 59.1
	II. Sh. c.	07 06		II. Sh. c.	09 42		I. Im.	12 06		II. Sh. f.	17 20
	II. Tr. f.	07 43		III. E. f.	09 50.5		II. Sh. c.	12 18		III. E. f.	17 52.2
	I. Im.	08 03		I. Im.	10 05		II. Tr. f.	13 18	29	I. Tr. c.	11 22
	II. Sh. f.	09 33		II. Tr. f.	10 30		III. E. f.	13 51.3		I. Sh. c.	12 01
	I. E. f.	11 14.0		II. Sh. f.	12 09		I. E. f.	15 04.1		I. Tr. f.	13 36
				I. E. f.	13 09.1		IV. Tr. c.	16 58		I. Sh. f.	14 14
							IV. Tr. f.	18 34			

Eclipse commences - - E. c.
 , finishes - - E. f.

Transit commences - - Tr. c.
 „ finishes - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - Em.

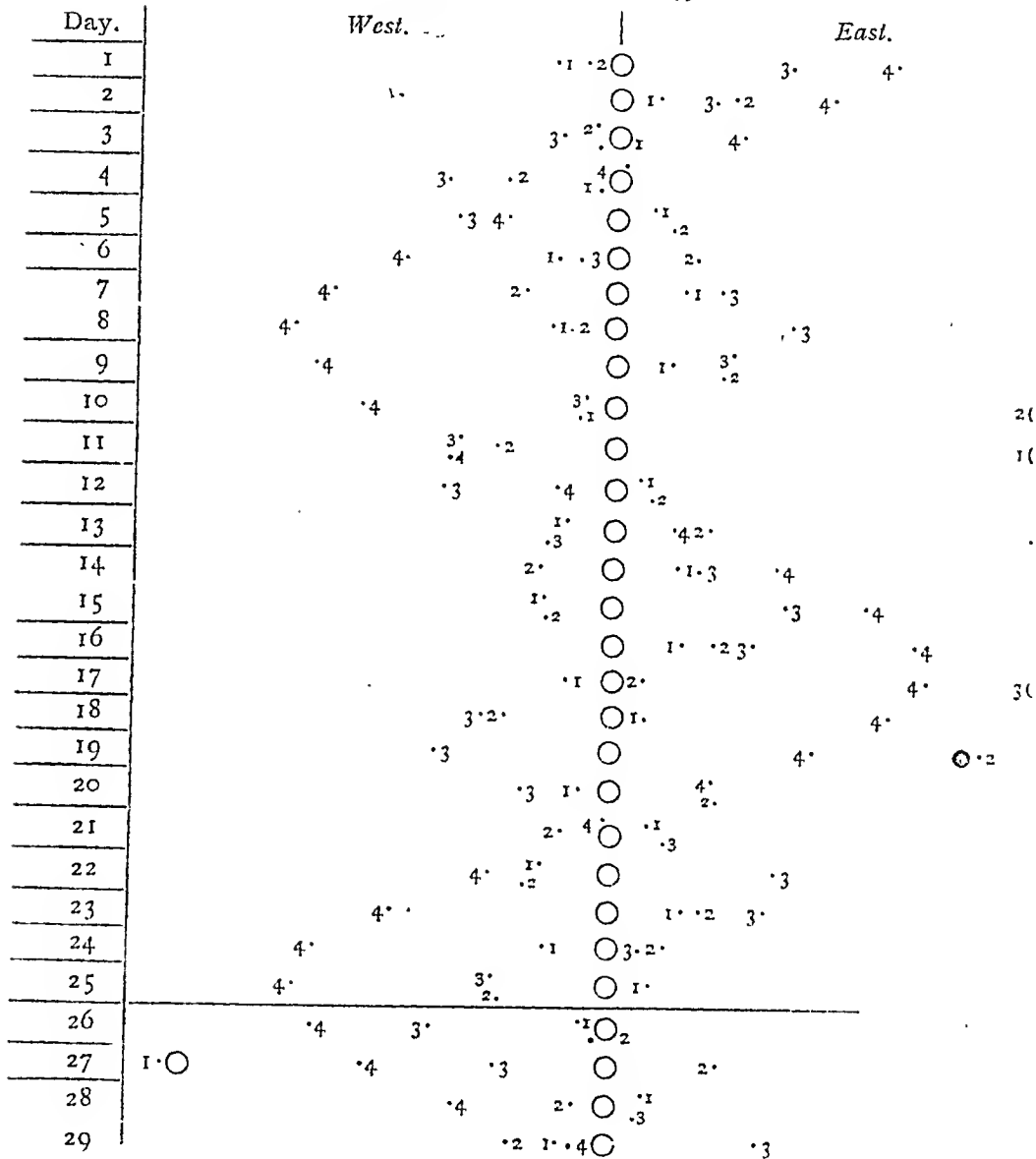
Shadow commences - - Sh. c.
 „ finishes - - Sh. f.

SATELLITES OF JUPITER, 1928.

FEBRUARY.

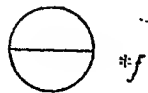
MEAN TIME.

Configurations at 18^h 45^m.

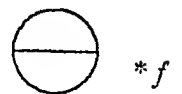


PHASES OF THE ECLIPSES.

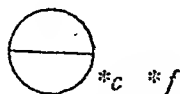
I.



II.

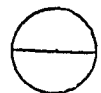


III.



IV.

No Eclipse of this Satellit



SATELLITES OF JUPITER, 1928.

517

MARCH.

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
1	IV. Im.	01 44	8	I. E. f.	13 22.7	16	I. Tr. c.	09 58	24	I. Im.	09 15
	IV. Em.	03 08		II. E. f.	14 40.4		I. Sh. c.	10 21		II. Tr. c.	11 29
	II. Im.	08 14					I. Tr. f.	12 12		I. E. f.	11 40.8
	I. Im.	08 38					I. Sh. f.	12 34		II. Sh. c.	11 58
	I. E. f.	11 27.8	9	I. Tr. c.	07 56					II. Tr. f.	13 59
	II. E. f.	12 02.0		I. Sh. c.	08 26	17	I. Im.	07 13		II. Sh. f.	14 24
				I. Tr. f.	10 10		II. Tr. c.	08 38		III. Tr. c.	16 29
2	I. Tr. c.	05 53		I. Sh. f.	10 38		II. Sh. c.	09 23		III. Sh. c.	17 33
	I. Sh. c.	06 30		IV. Tr. c.	14 22		I. E. f.	09 46.1		III. Tr. f.	19 08
	I. Tr. f.	08 07		IV. Tr. f.	14 54		II. Tr. f.	11 10		III. Sh. f.	19 54
	I. Sh. f.	08 43					II. Sh. f.	11 40	25	I. Tr. c.	06 32
			10	I. Im.	05 10		III. Tr. c.	11 55		I. Sh. c.	06 46
3	III. Tr. c.	02 51		II. Tr. c.	05 48		III. Sh. c.	13 31		I. Tr. f.	08 46
	II. Tr. c.	02 58		II. Sh. c.	06 47		III. Tr. f.	14 37		I. Sh. f.	08 58
	I. Im.	03 08		III. Tr. c.	07 23		III. Sh. f.	15 53			
	II. Sh. c.	04 12		I. E. f.	07 51.4	18	I. Tr. c.	04 29	26	I. Im.	03 45
	III. Sh. c.	05 26		II. Tr. f.	08 20		I. Sh. c.	04 50		I. E. f.	06 09.5
	II. Tr. f.	05 31		II. Sh. f.	09 13		I. Tr. f.	06 43		II. Im.	06 22
	III. Tr. f.	05 37		III. Sh. c.	09 29		I. Sh. f.	07 03		II. E. f.	09 16.2
	I. E. f.	05 56.5		III. Tr. f.	10 07				27	I. Tr. c.	01 03
	II. Sh. f.	06 38		III. Sh. f.	11 52					I. Sh. c.	01 14
	III. Sh. f.	07 51	11	I. Tr. c.	02 26	19	I. Im.	01 43		I. Tr. f.	03 16
				I. Sh. c.	02 55		II. Im.	03 28		I. Sh. f.	03 27
4	I. Tr. c.	00 23		I. Tr. f.	04 40		I. E. f.	04 14.8		I. Im.	22 16
	I. Sh. c.	00 59		I. Sh. f.	05 07		II. E. f.	06 38.2	28	I. E. f.	00 38.1
	I. Tr. f.	02 38		I. Im.	23 41		I. Tr. c.	23 00		II. Tr. c.	00 54
	I. Sh. f.	03 12					I. Sh. c.	23 19		II. Sh. c.	01 16
	I. Im.	21 39								II. Tr. f.	03 24
	II. Im.	21 41	12	II. Im.	00 34					II. Sh. f.	03 41
				I. E. f.	02 20.1	20	I. Tr. f.	01 14		III. Im.	06 47
				II. E. f.	04 00.0		I. Sh. f.	01 32		III. E. f.	09 56.2
5	I. E. f.	00 25.3		I. Tr. c.	20 57		I. Im.	20 14		I. Tr. c.	19 33
	II. E. f.	01 21.7		I. Sh. c.	21 24		II. Tr. c.	22 03		I. Sh. c.	19 43
	I. Tr. c.	18 54		I. Tr. f.	23 11		II. Sh. c.	22 41		I. Tr. f.	21 47
	I. Sh. c.	19 28		I. Sh. f.	23 36		I. E. f.	22 43.5		I. Sh. f.	21 56
	I. Tr. f.	21 08									
	I. Sh. f.	21 41	13	I. Im.	18 11	21	II. Tr. f.	00 34	29	I. Im.	16 46
				II. Tr. c.	19 13		II. Sh. f.	01 06		I. E. f.	19 06.8
6	I. Im.	16 09		II. Sh. c.	20 05		III. Im.	02 13		II. Im.	19 49
	II. Tr. c.	16 23		I. E. f.	20 48.7		III. E. f.	05 55.5		II. E. f.	22 34.8
	III. Im.	17 08		III. Im.	21 41		I. Tr. c.	17 30	30	I. Tr. c.	14 04
	II. Sh. c.	17 29		II. Tr. f.	21 45		I. Sh. c.	17 48		I. Sh. c.	14 12
	I. E. f.	18 53.9		II. Sh. f.	22 31		I. Tr. f.	19 44		I. Tr. f.	16 18
	II. Tr. f.	18 56					I. Sh. f.	20 00		I. Sh. f.	16 25
	II. Sh. f.	19 56									
	III. E. f.	21 53.2	14	III. E. f.	01 54.7	22	I. Im.	14 44	31	I. Im.	11 17
				I. Tr. c.	15 28		II. Im.	16 55		I. E. f.	13 35.4
				I. Sh. c.	15 52		I. E. f.	17 12.1		II. Tr. c.	14 19
7	I. Tr. c.	13 25		I. Tr. f.	17 42		II. E. f.	19 56.8		II. Sh. c.	14 34
	I. Sh. c.	13 57		I. Sh. f.	18 05					II. Tr. f.	16 49
	I. Tr. f.	15 39								II. Sh. f.	16 59
	I. Sh. f.	16 09	15	I. Im.	12 42	23	I. Tr. c.	12 01		III. Tr. c.	21 02
				II. Im.	14 01		I. Sh. c.	12 17		III. Sh. c.	21 36
8	I. Im.	10 40		I. E. f.	15 17.4		I. Tr. f.	14 15		III. Tr. f.	23 39
	II. Im.	11 07		II. E. f.	17 18.6		I. Sh. f.	14 29		III. Sh. f.	23 55

Eclipse commences - - E. c.

„ finishes - - E. f.

Transit commences - - Tr. c.

„ finishes - - Tr. f.

Occultation, immersion - Im.

„ emersion - - Em.

Shadow commences - - Sh. c.

„ finishes - - Sh. f.

SATELLITES OF JUPITER, 1928.

MARCH.

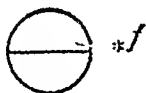
MEAN TIME.

Configurations at 18^h 30^m.

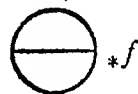
Day.	West.		East.
1		○ ¹ ₂ ⁴	3 [•]
2		○ ¹ ₂ ⁴	3 [•] 4 [•]
3		○ ¹ ₂ ⁴	3 [•] 4 [•]
4		○ ¹ ₂ ⁴	3 [•] 4 [•]
5		○ ¹ ₂ ⁴	3 [•] 4 [•]
6	2 [•] ○ ¹ ○ ³	○ ¹ ₂ ⁴	4 [•] ○ ¹
7		○ ¹ ₂ ⁴	3 [•] 4 [•]
8		○ ¹ ₂ ⁴	3 [•] 4 [•]
9		○ ¹ ₂ ⁴	3 [•] 4 [•]
10		○ ¹ ₂ ⁴	3 [•] 4 [•]
11		○ ¹ ₂ ⁴	3 [•] 4 [•]
12		○ ¹ ₂ ⁴	3 [•] 4 [•]
13	○ ¹ 4 [•]	○ ¹ ₂ ⁴	3 [•] 4 [•]
14		○ ¹ ₂ ⁴	3 [•] 4 [•]
15		○ ¹ ₂ ⁴	3 [•] 4 [•]
16		○ ¹ ₂ ⁴	3 [•] 4 [•]
17		○ ¹ ₂ ⁴	3 [•] 4 [•]
18		○ ¹ ₂ ⁴	3 [•] 4 [•]
19		○ ¹ ₂ ⁴	3 [•] 4 [•]
20		○ ¹ ₂ ⁴	3 [•] 4 [•]
21		○ ¹ ₂ ⁴	3 [•] 4 [•]
22		○ ¹ ₂ ⁴	3 [•] 4 [•]
23		○ ¹ ₂ ⁴	3 [•] 4 [•]
24	3 [•] ○	○ ¹ ₂ ⁴	3 [•] 4 [•]
25		○ ¹ ₂ ⁴	3 [•] 4 [•]
26		○ ¹ ₂ ⁴	3 [•] 4 [•]
27		○ ¹ ₂ ⁴	3 [•] 4 [•]
28		○ ¹ ₂ ⁴	3 [•] 4 [•]
29		○ ¹ ₂ ⁴	3 [•] 4 [•]
30		○ ¹ ₂ ⁴	3 [•] 4 [•]
31		○ ¹ ₂ ⁴	3 [•] 4 [•]

PHASES OF THE ECLIPSES.

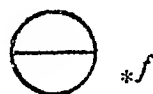
I.



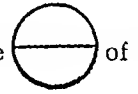
II.



III.



IV.

No Eclipse  of this Satellit.

SATELLITES OF JUPITER, 1928.

519

MAY.

MEAN TIME.

Jupiter being near the Sun the Phenomena
of the Satellites of Jupiter are not given from
April 1 until May 14.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
15	II. E. c.	01 13.8	20	I. E. c.	00 44.8	24	I. Sh. c.	11 03	28	III. Tr. c.	09 20
	II. Em.	04 58		I. Em.	03 40		I. Tr. c.	11 50		III. Tr. f.	11 30
	I. Sh. c.	14 40		II. Sh. c.	08 44		I. Sh. f.	13 14		I. E. c.	21 07.6
	I. Tr. c.	15 19		II. Tr. c.	10 12		I. Tr. f.	14 02			
	I. Sh. f.	16 51		II. Sh. f.	11 06		III. E. c.	15 46.7			
	I. Tr. f.	17 31		II. Tr. f.	12 35		III. E. f.	17 59.1	29	I. Em.	00 11
				I. Sh. c.	22 06		III. Im.	19 02		II. E. c.	06 27.4
				I. Tr. c.	22 50		III. Em.	21 15		II. Em.	10 36
16	I. E. c.	11 47.7								I. Sh. c.	18 29
	I. Em.	14 40								I. Tr. c.	19 21
	II. Sh. c.	19 26	21	I. Sh. f.	00 17	25	I. E. c.	08 10.5		I. Sh. f.	20 40
	II. Tr. c.	20 47		I. Tr. f.	01 02		I. Em.	11 11		I. Tr. f.	21 32
	II. Sh. f.	21 48		III. Sh. c.	01 49		II. E. c.	17 09.1			
	II. Tr. f.	23 10		III. Sh. f.	04 00		II. Em.	21 11	30	I. E. c.	15 36.2
				III. Tr. c.	04 51					I. Em.	18 41
				III. Tr. f.	07 05						
17	I. Sh. c.	09 08		I. E. c.	19 13.4	26	I. Sh. c.	05 32			
	I. Tr. c.	09 50		I. Em.	22 11		I. Tr. c.	06 21			
	I. Sh. f.	11 20					I. Sh. f.	07 43			
	III. E. c.	11 45.8					I. Tr. f.	08 32	31	II. Sh. c.	00 38
	I. Tr. f.	12 01	22	II. E. c.	03 50.7					II. Tr. c.	02 26
	III. E. f.	13 59.3		II. Em.	07 47					II. Sh. f.	02 59
	III. Im.	14 33		I. Sh. c.	16 34	27	I. E. c.	02 39.1		II. Tr. f.	04 26
	III. Em.	16 50		I. Tr. c.	17 20		I. Em.	05 41		I. Sh. c.	12 57
				I. Sh. f.	18 45		II. Sh. c.	11 20		I. Tr. c.	13 51
				I. Tr. f.	19 32		II. Tr. c.	13 01		I. Sh. f.	15 08
18	I. E. c.	06 16.3					II. Sh. f.	13 42		I. Tr. f.	16 02
	I. Em.	09 10					II. Tr. f.	15 23		III. E. c.	19 47.6
	II. E. c.	14 32.1	23	I. E. c.	13 42.0					III. E. f.	21 58.9
	II. Em.	18 23		I. Em.	16 41					III. Im.	23 29
				II. Sh. c.	22 02	28	I. Sh. c.	00 00			
				II. Tr. c.	23 37		I. Tr. c.	00 51			
19	I. Sh. c.	03 37					I. Sh. f.	02 11			
	I. Tr. c.	04 20					I. Tr. f.	03 02			
	I. Sh. f.	05 48	24	II. Sh. f.	00 24		III. Sh. c.	05 51			
	I. Tr. f.	06 31		II. Tr. f.	01 59		III. Sh. f.	08 01			
Eclipse commences - - E. c.			Transit commences - - Tr. c.								
,, finishes - - E. f.			,, finishes - - Tr. f.								
Occultation, immersion - Im.			Shadow commences - - Sh. c.								
,, emersion - - Em.			,, finishes - - Sh. f.								

SATELLITES OF JUPITER, 1928.

MAY.

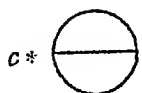
MEAN TIME.

Configurations at 03^h 30^m.

Day.	West.	East.
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		3° ○ 14°
16		3° 1° 4° 2°
17		4° 32° ○ 1°
18	4°	2° 1° ○ 3°
19	4°	1° ○ 2° 3°
20	4°	○ 2° 3°
21	4°	2° 1° 3° ○
22	4°	3° ○ 2° 1°
23		3° 4° 1° ○ 2°
24		3° 4° ○ 1°
25		2° 1° ○ 3° 4°
26		○ 1° 2° 3° 4°
27	○ 1°	○ 2° 3° 4°
28		2° 1° ○ 3° 4°
29		3° 2° ○ 1° 4°
30	3°	1° ○ 2° 4°
31		3° ○ 1° 4° 2°

PHASES OF THE ECLIPSES.

I.



II.



III.



IV.

No Eclipse of this Satel^lit

JUNE.

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
1	III. Em.	01 39	8	I. E. c.	11 58.9	16	II. E. c.	00 58.2	24	I. E. c.	10 15.7
	I. E. c.	10 04.7		I. Em.	15 11		II. Em.	05 32		I. Em.	13 39
	I. Em.	13 11		II. E. c.	22 22.0		I. Sh. c.	11 15		II. Sh. c.	21 44
	II. E. c.	19 45.5					I. Tr. c.	12 21			
	II. Em.	23 59					I. Sh. f.	13 25	25	II. Sh. f.	00 05
			9	II. Em.	02 46		I. Tr. f.	14 31		II. Tr. c.	00 10
				I. Sh. c.	09 21					II. Tr. f.	02 27
2	I. Sh. c.	07 26		I. Tr. c.	10 21	17	I. E. c.	08 21.6		I. Sh. c.	07 38
	I. Tr. c.	08 21		I. Sh. f.	11 31		I. Em.	11 40		I. Tr. c.	08 49
	I. Sh. f.	09 37		I. Tr. f.	12 32		II. Sh. c.	19 08		I. Sh. f.	09 48
	I. Tr. f.	10 32					II. Tr. c.	21 24		I. Tr. f.	10 58
							II. Sh. f.	21 29		III. Sh. c.	21 57
							II. Tr. f.	23 43			
3	I. E. c.	04 33.3	10	I. E. c.	06 27.4				26	III. Sh. f.	00 02
	I. Em.	07 41		I. Em.	09 41	18	I. Sh. c.	05 43		III. Tr. c.	02 56
	II. Sh. c.	13 56		II. Sh. c.	16 32		I. Tr. c.	06 51		I. E. c.	04 44.3
	II. Tr. c.	15 50		II. Tr. c.	18 38		I. Sh. f.	07 54		III. Tr. f.	04 51
	II. Sh. f.	16 17		II. Sh. f.	18 53		I. Tr. f.	09 00		I. Em.	08 08
	II. Tr. f.	18 10		II. Tr. f.	20 57		III. Sh. c.	17 56		II. E. c.	16 52.2
							III. Sh. f.	20 02		II. E. f.	19 13.5
							III. Tr. c.	22 36		II. Im.	19 20
4	I. Sh. c.	01 55	11	I. Sh. c.	03 49					II. Em.	21 38
	I. Tr. c.	02 51		I. Tr. c.	04 51	19	III. Tr. f.	00 34	27	I. Sh. c.	02 06
	I. Sh. f.	04 05		I. Sh. f.	06 00		I. E. c.	02 50.2		I. Tr. c.	03 19
	I. Tr. f.	05 02		I. Tr. f.	07 01		I. Em.	06 10		I. Sh. f.	04 16
	III. Sh. c.	09 53		III. Sh. c.	13 54		II. E. c.	14 16.3		I. Tr. f.	05 28
	III. Sh. f.	12 02		III. Sh. f.	16 02		II. Em.	18 54		I. E. c.	23 12.8
	III. Tr. c.	13 48		III. Tr. c.	18 13						
	III. Tr. f.	15 54		III. Tr. f.	20 15	20	I. Sh. c.	00 12	28	I. Em.	02 38
	I. E. c.	23 01.8					I. Tr. c.	01 20		II. Sh. c.	11 03
			12	I. E. c.	00 56.0		I. Sh. f.	02 22		II. Sh. f.	13 23
				I. Em.	04 11		I. Tr. f.	03 30		II. Tr. c.	13 33
5	I. Em.	02 11		II. E. c.	11 40.2		I. E. c.	21 18.7		II. Tr. f.	15 49
	II. E. c.	09 04.0		II. Em.	16 09	21	I. Em.	00 39		I. Sh. c.	20 35
	II. Em.	13 23		I. Sh. c.	22 18		II. Sh. c.	08 26		I. Tr. c.	21 48
	I. Sh. c.	20 23		I. Tr. c.	23 21		II. Sh. f.	10 47		I. Sh. f.	22 45
	I. Tr. c.	21 22					II. Tr. c.	10 47		I. Tr. f.	23 57
	I. Sh. f.	22 34	13	I. Sh. f.	00 28		II. Tr. f.	13 05	29	III. E. c.	11 52.8
	I. Tr. f.	23 32		I. Tr. f.	01 31		I. Sh. f.	18 41		III. E. f.	13 59.8
				I. E. c.	19 24.5		I. Tr. c.	19 50		III. Im.	17 00
6	I. E. c.	17 30.4		I. Em.	22 40		I. Sh. f.	20 51		I. E. c.	17 41.4
	I. Em.	20 41					I. Tr. f.	21 59		III. Em.	18 55
			14	II. Sh. c.	05 50	22	III. E. c.	07 51.8		I. Em.	21 07
				II. Tr. c.	08 01		III. E. f.	09 59.8	30	II. E. c.	06 09.9
7	II. Sh. c.	03 14		II. Sh. f.	08 11		III. Im.	12 41		II. E. f.	08 31.0
	II. Tr. c.	05 14		II. Tr. f.	10 20		III. Em.	14 40		II. Im.	08 42
	II. Sh. f.	05 35		I. Sh. c.	16 46		I. E. c.	15 47.2		II. Em.	10 59
	II. Tr. f.	07 33		I. Tr. c.	17 51		I. Em.	19 09		I. Sh. c.	15 03
	I. Sh. c.	14 52		I. Sh. f.	18 57					I. Tr. c.	16 18
	I. Tr. c.	15 51		I. Tr. f.	20 01	23	II. E. c.	03 34.2		I. Sh. f.	17 13
	I. Sh. f.	17 03					II. E. f.	05 55.7		I. Tr. f.	18 26
	I. Tr. f.	18 02					II. Im.	05 58			
	III. E. c.	23 48.8	15	III. E. c.	03 50.1		II. Em.	08 16			
				III. E. f.	05 59.2		I. Sh. c.	13 09			
				III. Im.	08 19		I. Tr. c.	14 20			
8	III. E. f.	01 59.1		III. Em.	10 22		I. Sh. f.	15 19			
	III. Im.	03 55		I. E. c.	13 53.1		I. Tr. f.	16 29			
	III. Em.	06 01		I. Em.	17 10						

Eclipse commences - - E. c.
 „ finishes - - - E. f.

Transit commences - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - Im.
 „ emersion - - - Em.

Shadow commences - - Sh. c.
 „ finishes - - - Sh. f.

SATELLITES OF JUPITER, 1928.

JUNE.

MEAN TIME.

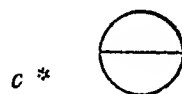
Configurations at 03 ^h 00 ^m .		
Day..	West.	East.
1		·2 ·1 ○ ·3 4·
2		4· ○ ·2 ·3
3		·1 ○ 2· 3·
4	4·	2· ○ 3·
5	4·	3· ·2 ○ ·1
6	4· 3·	1· ○ ·2
7	·4 ·3	○ ·2 ·1
8	·4 2· 1·	○ ·3
9		○ ·2 1· ·3
10		·1 ·4 ○ 2· 3·
11		2· ○ 1· 3· ·4
12	·○ 1	·2 3· ○ ·4
13		3· 1· ○ ·2 ·4
14		·3 ○ ·2 ·1 ·4
15		2· 1· ·3 ○ 1· ·3 4·
16	·○ 2	○ 1· ·3 4·
17		·1 ○ 2· ·4 ·3
18		2· ○ 1· ·4 3·
19	·○ 1	·2 4· 3· ○
20	1· ○	4· 3· ○ ·2
21	4· ·3	○ ·1 2·
22	4· 2· 1· ·3	○
23	·4	·2 ○ ·1 ·3
24	·4	·1 ○ ·2 ·3
25	·4	·2 ○ 1· 3·
26		·2 ·4 ·1 ○
27	3·	1· ·4 ·2
28	·3	○ ·1 2· ·4
29		2· 1· ○ ·4
30		·2 ○ ·1 ·3 ·4

PHASES OF THE ECLIPSES.

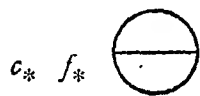
I.




II.



III.



IV.

No Eclipse  of this Satellite.

SATELLITES OF JUPITER, 1928.

523

JULY.

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
1	I. E. c.	12 09.9	9	II. Tr. c.	05 39	16	I. Tr. c.	14 40	24	I. E. c.	12 20.8
	I. Em.	15 37		II. Tr. f.	07 54		I. Sh. f.	15 29		III. Sh. c.	14 01
2	II. Sh. c.	00 21		I. Sh. c.	11 26		I. Tr. f.	16 48		I. Em.	15 55
	II. Sh. f.	02 41		I. Tr. c.	12 44	17	III. Sh. c.	10 00		III. Sh. f.	16 02
	II. Tr. c.	02 55		I. Sh. f.	13 35		I. E. c.	10 26.7		III. Tr. c.	19 50
	II. Tr. f.	05 11		I. Tr. f.	14 52		III. Sh. f.	12 02		III. Tr. f.	21 27
	I. Sh. c.	09 32	10	III. Sh. c.	05 59		I. Em.	13 59	25	II. E. c.	03 13.7
	I. Tr. c.	10 47		III. Sh. f.	08 02		III. Tr. c.	15 41		II. E. f.	05 33.5
	I. Sh. f.	11 42		I. E. c.	08 32.6		III. Tr. f.	17 23		II. Im.	06 02
	I. Tr. f.	12 56		III. Tr. c.	11 29	18	II. E. c.	00 38.5		II. Em.	08 16
3	III. Sh. c.	01 58		I. Em.	12 03		II. E. f.	02 58.8		I. Sh. c.	09 42
	III. Sh. f.	04 02		III. Tr. f.	13 15		II. Im.	03 24		I. Tr. c.	11 04
	I. E. c.	06 38.4		II. E. c.	22 03.3		II. Em.	05 39		I. Sh. f.	11 51
	III. Tr. c.	07 14	11	II. E. f.	00 23.9		I. Sh. c.	07 48	26	I. Tr. f.	13 12
	III. Tr. f.	09 04		II. Im.	00 44		I. Tr. c.	09 09		I. E. c.	06 49.3
	I. Em.	10 06		II. Em.	03 00		I. Sh. f.	09 58		I. Em.	10 24
	II. E. c.	19 27.8		I. Sh. c.	05 54	19	I. Tr. f.	11 17		II. Sh. c.	21 29
	II. E. f.	21 48.8		I. Tr. c.	07 13		I. E. c.	04 55.2	27	II. Sh. f.	23 48
	II. Im.	22 03		I. Sh. f.	08 04		I. Em.	08 28		II. Tr. c.	00 21
4	II. Em.	00 20		I. Tr. f.	09 22		II. Sh. c.	18 52		II. Tr. f.	02 33
	I. Sh. c.	04 00	12	I. E. c.	03 01.1		II. Sh. f.	21 11		I. Sh. c.	04 11
	I. Tr. c.	05 16		I. Em.	06 32		II. Tr. c.	21 41		I. Tr. c.	05 33
	I. Sh. f.	06 10		II. Sh. c.	16 16	20	II. Tr. f.	23 54	28	I. Sh. f.	06 20
	I. Tr. f.	07 25		II. Sh. f.	18 35		I. Sh. c.	02 17		I. Tr. f.	07 41
5	I. E. c.	01 06.9		II. Tr. c.	19 00		I. Tr. c.	03 38		I. E. c.	01 17.9
	I. Em.	04 35		II. Tr. f.	21 14		I. Sh. f.	04 26		III. E. c.	03 56.0
	II. Sh. c.	13 39	13	I. Sh. c.	00 23		I. Tr. f.	05 46		I. Em.	04 52
	II. Sh. f.	15 59		I. Tr. c.	01 42		I. E. c.	23 23.7		III. E. f.	05 59.2
	II. Tr. c.	16 17		I. Sh. f.	02 32		III. E. c.	23 55.1		III. Im.	09 47
	II. Tr. f.	18 32		I. Tr. f.	03 50	21	III. E. f.	01 59.2		III. Em.	11 25
	I. Sh. c.	22 29		III. E. c.	19 54.5		I. Em.	02 57		II. E. c.	16 31.2
	I. Tr. c.	23 46		I. E. c.	21 29.6		III. Im.	05 40		II. E. f.	18 50.9
6	I. Sh. f.	00 38		III. E. f.	21 59.5		III. Em.	07 22		II. Im.	19 20
	I. Tr. f.	01 54	14	I. Em.	01 01		II. E. c.	13 56.2		II. Em.	21 33
	III. E. c.	15 53.9		III. Im.	01 30		II. E. f.	16 16.2	29	I. Sh. c.	22 39
	III. E. f.	17 59.9		III. E. c.	03 17		II. Im.	16 43		I. Tr. c.	00 02
	I. E. c.	19 35.5		II. E. c.	11 20.9		II. Em.	18 58		I. Sh. f.	00 48
	III. Im.	21 17		II. E. f.	13 41.3		I. Sh. c.	20 45		I. Tr. f.	02 09
	I. Em.	23 05		II. Im.	14 05		I. Tr. c.	22 07		I. E. c.	19 46.4
	III. Em.	23 08		II. Em.	16 20		I. Sh. f.	22 54		I. Em.	23 21
7	II. E. c.	08 45.5		I. Sh. c.	18 51	22	I. Tr. f.	00 15	30	II. Sh. c.	10 48
	II. E. f.	11 06.3		I. Tr. c.	20 11		I. E. c.	17 52.2		II. Sh. f.	13 06
	II. Im.	11 24		I. Sh. f.	21 01		I. Em.	21 26		II. Tr. c.	13 40
	II. Em.	13 40		I. Tr. f.	22 20		II. Sh. c.	08 11		II. Tr. f.	15 52
	I. Sh. c.	16 57	15	I. E. c.	15 58.1	23	II. Sh. f.	10 30		I. Sh. c.	17 08
	I. Tr. c.	18 15		I. Em.	19 30		II. Tr. c.	11 02		I. Tr. c.	18 30
	I. Sh. f.	19 07		II. Sh. c.	05 34		II. Tr. f.	13 14	31	I. Sh. f.	19 17
	I. Tr. f.	20 23		II. Sh. f.	07 53		I. Sh. c.	15 14		I. Tr. f.	20 38
8	I. E. c.	14 04.0		II. Tr. c.	08 21		I. Tr. c.	16 36		I. E. c.	14 14.9
	I. Em.	17 34		II. Tr. f.	10 35		I. Sh. f.	17 23		I. Em.	17 49
9	II. Sh. c.	02 58		I. Sh. c.	13 20		I. Tr. f.	18 43		III. Sh. c.	18 02
	II. Sh. f.	05 17								III. Sh. f.	20 02
										III. Tr. c.	23 54

Eclipse commences - - E. c.
 „ finishes - - - E. f.

Transit commences - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - Im.
 „ emersion - - - Em.

Shadow commences - - Sh. c.
 „ finishes - - - Sh. f.

DECEMBER.

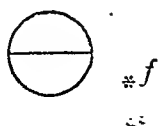
MEAN TIME.

Configurations at 21^h 15^m.

Day.	West.		East.
1.	2. ○	3. 1. ○ 4.	
2		3. 2. 4. ○ 1.	
3		4. 1. 3. ○ 2.	
4		4. ○ 1. 2. 3.	
5	4. 1.	2. 1. ○ 3.	
6	4.	2. ○ 3.	1. ○
7	4.	3. ○ 2.	○
8	4. 3.	1. 2. ○	
9		3. 2. ○ 1.	
10		1. 3. 4. 2. ○	
11		1. 2. 3. 4. ○	
12		2. 1. ○ 3. 4.	
13		2. 1. ○ 3. 4.	
14		3. 1. ○ 2. 4.	○
15		3. 1. 2. ○ 4.	
16		3. 2. ○ 1. 4.	
17		1. 3. ○ 4.	○
18		1. 4. 1. 2. 3. ○	
19		4. 2. 1. ○ 3.	
20		4. 2. ○ 1. 3.	
21	4.	3. 1. 2. ○	
22	4.	1. 2. ○ 3.	
23	4.	3. 2. ○ 1.	
24	○ 2.	4. 3. 1. ○	
25		4. 1. 2. 3. ○	
26		4. 1. 2. 3. ○	
27		2. 1. 4. 3. ○	
28		1. 3. 2. 4. ○	
29		3. 2. ○ 4.	1. ○
30		3. 2. ○ 4.	○
31		3. 1. 2. ○ 4.	
32		1. 2. 4. ○	○

PHASES OF THE ECLIPSES.

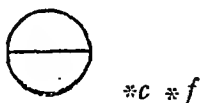
I.



II.



III.



IV.

No Eclipse of this Satell.



AUGUST.

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
1	III. Tr. f.	01 27	8	I. Sh. c.	13 30	16	I. E. c.	12 31.8	24	II. Tr. c.	10 40
	II. E. c.	05 48.7		I. Tr. c.	14 52		I. Em.	16 04		I. Sh. c.	11 45
	II. E. f.	08 08.2		I. Sh. f.	15 39					II. Tr. f.	12 49
	II. Im.	08 38		I. Tr. f.	16 59	17	II. Sh. c.	05 20		I. Tr. c.	13 02
	II. Em.	10 51					II. Sh. f.	07 38		I. Sh. f.	13 54
	I. Sh. c.	11 36	9	I. E. c.	10 37.6		II. Tr. c.	08 08		I. Tr. f.	15 09
	I. Tr. c.	12 59		I. Em.	14 12		I. Sh. c.	09 52			
	I. Sh. f.	13 45					II. Tr. f.	10 18	25	I. E. c.	08 54.7
	I. Tr. f.	15 06	10	II. Sh. c.	02 43		I. Tr. c.	11 12		I. Em.	12 23
				II. Sh. f.	05 01		I. Sh. f.	12 01		III. E. c.	20 00.7
2	I. E. c.	08 43.5		II. Tr. c.	05 35		I. Tr. f.	13 19		III. E. f.	22 00.3
	I. Em.	12 18		II. Tr. f.	07 45				26	III. Im.	01 31
3	II. Sh. c.	00 06		I. Sh. c.	07 58	18	I. E. c.	07 00.4		II. E. c.	02 50.3
	II. Sh. f.	02 24		I. Tr. c.	09 20		I. Em.	10 32		III. Em.	02 54
	II. Tr. c.	02 59		I. Sh. f.	10 07		III. E. c.	15 59.6		II. E. f.	05 08.7
	II. Tr. f.	05 10		I. Tr. f.	11 27		III. E. f.	18 00.1		II. Im.	05 27
	I. Sh. c.	06 04					III. Im.	21 42		I. Sh. c.	06 14
	I. Tr. c.	07 27	11	I. E. c.	05 06.2		III. Em.	23 08		I. Tr. c.	07 30
	I. Sh. f.	08 13		I. Em.	08 40					II. Em.	07 36
	I. Tr. f.	09 34		III. E. c.	11 58.7	19	II. E. c.	00 15.7		I. Sh. f.	08 23
				III. E. f.	14 00.1		II. E. f.	02 34.4		I. Tr. f.	09 37
4	I. E. c.	03 12.0		III. Im.	17 49		II. Im.	02 58			
	I. Em.	06 46		III. Em.	19 18		I. Sh. c.	04 20	27	I. E. c.	03 23.3
	III. E. c.	07 57.1		II. E. c.	21 40.9		II. Em.	05 09		I. Em.	06 50
	III. E. f.	09 59.3	12	II. E. f.	00 00.0		I. Tr. c.	05 40		II. Sh. c.	21 16
	III. Im.	13 49		II. Im.	00 29		I. Sh. f.	06 29		II. Sh. f.	23 34
	III. Em.	15 23		I. Sh. c.	02 27		I. Tr. f.	07 47		II. Tr. c.	23 55
	II. E. c.	19 06.1		II. Em.	02 39	20	I. E. c.	01 29.0	28	I. Sh. c.	00 42
	II. E. f.	21 25.5		I. Tr. c.	03 48		I. Em.	05 00		I. Tr. c.	01 57
	II. Im.	21 55		I. Sh. f.	04 35		II. Sh. c.	18 39		II. Tr. f.	02 04
5	II. Em.	00 07		I. Tr. f.	05 55		II. Sh. f.	20 57		I. Sh. f.	02 51
	I. Sh. c.	00 33		I. E. c.	23 34.7		II. Tr. c.	21 25		I. Tr. f.	04 04
	I. Tr. c.	01 55	13	I. Em.	03 08		I. Sh. c.	22 49		I. E. c.	21 51.9
	I. Sh. f.	02 42		II. Sh. c.	16 02		II. Tr. f.	23 34	29	I. Em.	01 18
	I. Tr. f.	04 03		II. Sh. f.	18 20	21	I. Tr. c.	00 07		III. Sh. c.	10 04
	I. E. c.	21 40.5		II. Tr. c.	18 52		I. Sh. f.	00 57		III. Sh. f.	12 01
6	I. Em.	01 15		I. Sh. c.	20 55		I. Tr. f.	02 14		III. Tr. c.	15 28
	II. Sh. c.	13 25		II. Tr. f.	21 02		I. E. c.	19 57.6		II. E. c.	16 07.6
	II. Sh. f.	15 43		I. Tr. c.	22 16		I. Em.	23 28		III. Tr. f.	16 44
	II. Tr. c.	16 17		I. Sh. f.	23 04	22	III. Sh. c.	06 04		II. E. f.	18 25.9
	II. Tr. f.	18 28					III. Sh. f.	08 01		II. Im.	18 40
	I. Sh. c.	19 01	14	I. Tr. f.	00 23		III. Tr. c.	11 42		I. Sh. c.	19 11
	I. Tr. c.	20 24		I. E. c.	18 03.3		III. Tr. f.	13 02		I. Tr. c.	20 25
	I. Sh. f.	21 10		I. Em.	21 36		II. E. c.	13 33.0		II. Em.	20 49
	I. Tr. f.	22 31	15	III. Sh. c.	02 03		II. E. f.	15 51.6		I. Sh. f.	21 20
7	I. E. c.	16 09.1		III. Sh. f.	04 01		II. Im.	16 13		I. Tr. f.	22 32
	I. Em.	19 43		III. Tr. c.	07 50		I. Sh. c.	17 17	30	I. E. c.	16 20.4
	III. Sh. c.	22 03		III. Tr. f.	09 14		II. Em.	18 23		I. Em.	19 45
8	III. Sh. f.	00 02		II. E. c.	10 58.3		I. Tr. c.	18 35	31	II. Sh. c.	10 34
	III. Tr. c.	03 55		II. E. f.	13 17.2		I. Sh. f.	19 26		II. Tr. c.	12 52
	III. Tr. f.	05 23		II. Im.	13 43		I. Tr. f.	20 42		II. Tr. f.	13 09
	II. E. c.	08 23.6		I. Sh. c.	15 23	23	I. E. c.	14 26.1		I. Sh. c.	13 39
	II. E. f.	10 42.7		II. Em.	15 54		I. Em.	17 55		I. Tr. c.	14 52
	II. Im.	11 12		I. Tr. c.	16 44	24	II. Sh. c.	07 57		II. Tr. f.	15 17
	II. Em.	13 24		I. Sh. f.	17 32		II. Sh. f.	10 15		I. Sh. f.	15 48
				I. Tr. f.	18 51					I. Tr. f.	16 59

Eclipse commences - - - E. c.
 „ finishes - - - E. f.






























Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - - Em.





Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

SATELLITES OF JUPITER, 1928.

AUGUST.

MEAN TIME.		
Configurations at 01 ^h 30 ^m .		
Day.	West.	East.
1		2 3  1 4
2		3 1  2 4
3		3 2  1 4
4		2 3 1  4
5		1  2 3 4
6		 1 2 3 4
7		2 1  4 3
8		2 3  1 4
9		3 4 1  2
10		4 3  2 1
11	4	2 1  3
12	4	 2 3 1
13	 1 4	 2 3
14	4	3 1  2
15		4 2  1 3
16		3 1 2 4  2
17		3  2 1 4
18		3 1 2  4
19	 1	1 2 3 4
20	 1	 2 3 4
21	1	2 1  3 4
22		2  1 3 4
23		3 1  2 4
24		3  2 1 4
25		3 2 1 4  1
26		3 2  1 4
27		3 1 2 3 4
28	3 4	1 2 3 4
29	4	2 1 1 3 4
30	4	3 1 1 2 4
31	4 3	 1 2 4

PHASES OF THE ECLIPSES.

I.		II.	
III.		IV.	

I. c_*
 II. c_* f_*
 III. c_* f
 IV. No Eclipse of this Satellite.

SATELLITES OF JUPITER, 1928.

527

SEPTEMBER.

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
1	I. E. c.	10 49.1	8	I. E. c.	12 43.4	16	III. E. c.	08 03.2	23	II. Em.	17 04
	I. Em.	14 13		I. Em.	16 01		III. E. f.	10 00.5		III. Em.	17 07
2	III. E. c.	00 01.2	9	III. E. c.	04 02.0		II. E. c.	10 34.1	24	I. E. c.	13 01.0
	III. E. f.	02 00.1		III. E. f.	06 00.1		I. Sh. c.	11 55		I. Em.	14 02
	III. Im.	05 15		II. E. c.	07 59.5		III. Im.	12 29		II. Sh. c.	07 46
	II. E. c.	05 24.9		III. Im.	08 55		I. Tr. c.	12 54		I. Sh. c.	08 17
	III. Em.	06 33		I. Sh. c.	10 01		III. Em.	13 39	25	I. Tr. c.	09 07
	II. E. f.	07 43.1		III. Em.	10 08		I. Sh. f.	14 04		II. Tr. c.	09 33
	II. Im.	07 52		I. Tr. c.	11 07		II. Em.	14 45		II. Sh. f.	10 04
	I. Sh. c.	08 07		I. Sh. f.	12 10	17	I. E. c.	09 06.5		I. Sh. f.	10 26
	I. Tr. c.	09 19		II. Em.	12 24		I. Em.	12 16		I. Tr. f.	11 14
	II. Em.	10 01		I. Tr. f.	13 14					II. Tr. f.	11 40
	I. Sh. f.	10 16				18	II. Sh. c.	05 09	26	I. E. c.	05 29.8
	I. Tr. f.	11 26		I. E. c.	07 12.0		I. Sh. c.	06 23		I. Em.	08 29
			10	I. Em.	10 28		II. Tr. c.	07 12			
3	I. E. c.	05 17.6					I. Tr. c.	07 21	27	III. Sh. c.	02 08
	I. Em.	08 40		II. Sh. c.	02 31		II. Sh. f.	07 26		II. E. c.	02 26.1
	II. Sh. c.	23 54	11	I. Sh. c.	04 29		I. Sh. f.	08 32		I. Sh. c.	02 45
4	II. Sh. f.	02 11		II. Sh. f.	04 49		II. Tr. f.	09 19		I. Tr. c.	03 33
	II. Tr. c.	02 23		II. Tr. c.	04 49	19	I. E. c.	03 35.2		III. Sh. f.	04 02
	I. Sh. c.	02 36		I. Tr. c.	05 34		I. Em.	06 43		I. Sh. f.	04 55
	I. Tr. c.	03 46		I. Sh. f.	06 39		III. Sh. c.	22 07		I. Tr. f.	05 40
	II. Tr. f.	04 31		II. Tr. f.	06 56		II. E. c.	23 51.4		III. Tr. c.	05 46
	I. Sh. f.	04 45		I. Tr. f.	07 41					II. Em.	06 12
	I. Tr. f.	05 53				20	III. Sh. f.	00 02		III. Tr. f.	06 49
	I. E. c.	23 46.2	12	I. E. c.	01 40.7		I. Sh. c.	00 52		I. E. c.	23 58.4
5	I. Em.	03 07		I. Em.	04 54		I. Tr. c.	01 47	28	I. Em.	02 55
	III. Sh. c.	14 05		III. Sh. c.	18 06		III. Tr. c.	02 18		II. Sh. c.	21 05
	III. Sh. f.	16 01		III. Sh. f.	20 02		I. Sh. f.	03 01		I. Sh. c.	21 14
	II. E. c.	18 42.2		II. E. c.	21 16.8		III. Tr. f.	03 24		I. Tr. c.	21 59
	III. Tr. c.	19 10		III. Tr. c.	22 47		I. Tr. f.	03 54		II. Tr. c.	22 42
	III. Tr. f.	20 22		I. Sh. c.	22 58		II. Em.	03 55		II. Sh. f.	23 22
	II. E. f.	21 00.2		III. Tr. f.	23 55		I. E. c.	22 03.8		I. Sh. f.	23 23
	I. Sh. c.	21 04	13	I. Tr. c.	00 01	21	I. Em.	01 09	29	I. Tr. f.	00 06
	II. Im.	21 04		I. Sh. f.	01 07		II. Sh. c.	18 27		II. Tr. f.	00 49
	I. Tr. c.	22 13		II. Em.	01 35		I. Sh. c.	19 20		I. E. c.	18 27.1
	I. Sh. f.	23 13		I. Tr. f.	02 08		II. Tr. c.	20 14		I. Em.	21 21
	II. Em.	23 13		I. E. c.	20 09.2		II. Sh. f.	20 45	30	I. Sh. c.	15 42
6	I. Tr. f.	00 20		I. Em.	23 22		I. Sh. f.	21 29		II. E. c.	15 43.4
	I. E. c.	18 14.8	14	II. Sh. c.	15 49		I. Tr. f.	22 21		III. E. c.	16 06.5
	I. Em.	21 34		I. Sh. c.	17 26	22	II. Tr. f.	22 29		I. Tr. c.	16 25
7	II. Sh. c.	13 12		II. Tr. c.	18 00		I. E. c.	16 32.5		I. Sh. f.	17 52
	I. Sh. f.	15 29		II. Sh. f.	18 07		I. Em.	19 36		III. E. f.	18 02.4
	I. Sh. c.	15 33		I. Tr. c.	18 28	23	III. E. c.	12 04.6		I. Tr. f.	18 33
	II. Tr. c.	15 36		I. Sh. f.	19 35		I. Sh. c.	13 08.7		II. Im.	19 20
	I. Tr. c.	16 40		II. Tr. f.	20 07		III. E. f.	14 01.1		III. Im.	19 24
	I. Sh. f.	17 42		I. Tr. f.	20 35		I. Tr. c.	14 40		III. Em.	20 31
	II. Tr. f.	17 43	15	I. E. c.	14 37.9		I. Sh. f.	15 58			
	I. Tr. f.	18 47		I. Em.	17 49		III. Im.	15 58			
							I. Tr. f.	16 47			

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - Im.
 „ emersion - - - Em.

Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

SATELLITES OF JUPITER, 1928.

SEPTEMBER.

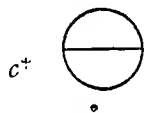
MEAN TIME.

Configurations at 01^h 00^m.

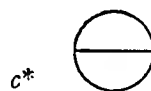
Day.	West.	East.
1	3·4 2 ¹ _I ○	
2	○ 3	2 · ○ 4 1 ¹
3		1 ¹ ○ 4 ² ₃
4		2 ¹ ○ 1 _I 3 · 4
5	○ 1	2 · ○ 3 ¹ 4
6		3 ¹ 1 _I ○ 2 ¹ 4
7	3 ¹	○ 1 ¹ 2 ¹ 4 ¹
8	3 ¹ 2 ¹ _I ○	4 ¹
9		2 ¹ 3 ¹ ○ 1 ¹ 4 ¹
10		1 ¹ ○ 4 ¹ 2 ¹ ₃
11		4 ¹ ○ 2 ¹ _I 3 ¹
12	4 ¹ 2 ¹	1 ¹ ○ 3 ¹
13	4 ¹	3 ¹ ○ 2 ¹ 1 ¹ ○
14	4 ¹ 3 ¹	○ 1 ¹ 2 ¹
15	4 ¹ 3 ¹ 2 ¹ _I ○	
16	4 ¹ 2 ¹ ₃ ○	1 ¹
17	4 ¹ 1 ¹ ○	2 ¹ ₃
18		4 ¹ ○ 2 ¹ _I 3 ¹
19		2 ¹ 1 ¹ ○ 4 ¹ 3 ¹
20	○ 2	3 ¹ 1 _I ○ 4 ¹
21		3 ¹ ○ 2 ¹ 4 ¹ ○ 1 ¹
22	3 ¹	2 ¹ _I ○ 4 ¹
23		2 ¹ ₃ ○ 1 ¹ 4 ¹
24		1 ¹ ○ 3 ¹ 2 ¹ 4 ¹
25		○ 2 ¹ _I 3 ¹ 4 ¹
26		2 ¹ 1 ¹ ○ 4 ¹ 3 ¹
27		4 ¹ 2 ¹ _I 3 ¹ 1 ¹
28	○ 1	4 ¹ 3 ¹ ○ 2 ¹
29		4 ¹ 3 ¹ 2 ¹ _I ○
30	4 ¹ 2 ¹ ₃ ○	1 ¹

PHASES OF THE ECLIPSES.

I.



II.



III.



IV.

No Eclipse of this Satellite.



SATELLITES OF JUPITER, 1928.

529

OCTOBER.

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
1	I. E. c.	12 55.7	9	I. Sh. c.	12 05	16	II. Tr. c.	16 24	24	I. E. c.	13 09.2
	I. Em.	15 48		I. Tr. c.	12 36		I. Tr. f.	16 27		I. Em.	15 26
				II. Sh. c.	13 02		II. Sh. f.	17 57			
				II. Tr. c.	14 09		II. Tr. f.	18 32			
2	I. Sh. c.	10 11		I. Sh. f.	14 14				25	I. Sh. c.	10 22
	II. Sh. c.	10 24		I. Tr. f.	14 43					I. Tr. c.	10 28
	I. Tr. c.	10 51		II. Sh. f.	15 19	17	I. E. c.	11 14.2		I. Sh. f.	12 31
	II. Tr. c.	11 52		II. Tr. f.	16 16		I. Em.	13 42		I. Tr. f.	12 36
	I. Sh. f.	12 20								II. E. c.	12 45.8
	II. Sh. f.	12 41								II. Em.	15 09
	I. Tr. f.	12 59	10	I. E. c.	09 19.2	18	I. Sh. c.	08 27		III. Sh. c.	18 12
	II. Tr. f.	13 58		I. Em.	11 58		I. Tr. c.	08 45		III. Tr. c.	18 53
							II. E. c.	10 10.7		III. Sh. f.	20 04
							I. Sh. f.	10 37		III. Tr. f.	20 04
3	I. E. c.	07 24.5	11	I. Sh. c.	06 33		I. Tr. f.	10 53			
	I. Em.	10 14		I. Tr. c.	07 02		II. Em.	12 56	26	I. E. c.	07 37.9
				II. E. c.	07 35.6		III. Sh. c.	14 10		I. Em.	09 52
				I. Sh. f.	08 43		III. Tr. c.	15 39			
4	I. Sh. c.	04 39		I. Tr. f.	09 09		III. Sh. f.	16 02			
	II. E. c.	05 00.8		III. Sh. c.	10 09		III. Tr. f.	16 47			
	I. Tr. c.	05 18		II. Em.	10 43				27	I. Sh. c.	04 50
	III. Sh. c.	06 08		III. Sh. f.	12 02					I. Tr. c.	04 54
	I. Sh. f.	06 49		III. Tr. c.	12 24	19	I. E. c.	05 42.9		I. Sh. f.	07 00
	I. Tr. f.	07 25		III. Tr. f.	13 29		I. Em.	08 08		I. Tr. f.	07 02
	III. Sh. f.	08 02								II. Sh. c.	07 36
	II. Em.	08 28								II. Tr. c.	07 46
	III. Tr. c.	09 06	12	I. E. c.	03 48.0	20	I. Sh. c.	02 56		II. Sh. f.	09 54
	III. Tr. f.	10 10		I. Em.	06 24		I. Tr. c.	03 11		II. Tr. f.	09 55
							II. Sh. c.	04 58			
5	I. E. c.	01 53.1	13	I. Sh. c.	01 02		I. Sh. f.	05 05	28	I. E. c.	02 06.8
	I. Em.	04 40		I. Tr. c.	01 27		I. Tr. f.	05 18		I. Em.	04 18
	I. Sh. c.	23 08		II. Sh. c.	02 20		II. Tr. c.	05 31		I. Sh. c.	23 19
	II. Sh. c.	23 42		I. Sh. f.	03 11		II. Sh. f.	07 16		I. Tr. c.	23 20
	I. Tr. c.	23 44		II. Tr. c.	03 16						
				I. Tr. f.	03 35						
				II. Sh. f.	04 38	21	I. E. c.	00 11.7	29	I. Sh. f.	01 28
6	II. Tr. c.	01 00		II. Tr. f.	05 24		I. Em.	02 34		I. Tr. f.	01 28
	I. Sh. f.	01 17		I. E. c.	22 16.7		I. Sh. c.	21 24		II. E. c.	02 03.5
	I. Tr. f.	01 51					I. Tr. c.	21 37		II. E. f.	04 20.1
	II. Sh. f.	02 00					II. E. c.	23 28.2		III. E. c.	08 11.6
	II. Tr. f.	03 07	14	I. Em.	00 50		I. Sh. f.	23 34		III. E. f.	10 05.2
	I. E. c.	20 21.9		I. Sh. c.	19 30		I. Tr. f.	23 44		I. Im.	20 35
	I. Em.	23 06		I. Tr. c.	19 53					I. E. f.	22 46.1
				II. E. c.	20 53.1						
				I. Sh. f.	21 40	22	II. Em.	02 03			
				I. Tr. f.	22 01		III. E. c.	04 10.3	30	I. Tr. c.	17 46
7	I. Sh. c.	17 36		II. Em.	23 50		III. Em.	06 27		I. Sh. c.	17 47
	I. Tr. c.	18 10					I. E. c.	18 40.4		I. Tr. f.	19 53
	II. E. c.	18 18.2					I. Em.	21 00		I. Sh. f.	19 57
	I. Sh. f.	19 46								II. Tr. c.	20 54
	III. E. c.	20 07.7	15	III. E. c.	00 09.1					II. Sh. c.	20 56
	I. Tr. f.	20 17		III. Em.	03 11	23	I. Sh. c.	15 53		II. Tr. f.	23 03
	II. Em.	21 36		I. E. c.	16 45.4		I. Tr. c.	16 02		II. Sh. f.	23 13
	III. E. f.	22 03.0		I. Em.	19 16		I. Sh. f.	18 03			
	III. Im.	22 44					I. Tr. f.	18 10			
	III. Em.	23 52	16	I. Sh. c.	13 59		II. Sh. c.	18 18	31	I. Im.	15 01
8	I. E. c.	14 50.5		I. Tr. c.	14 19		II. Tr. c.	18 39		I. E. f.	17 15.0
	I. Em.	17 32		II. Sh. c.	15 40		II. Sh. f.	20 35			
				I. Sh. f.	16 08		II. Tr. f.	20 48			

Eclipse commences - - E. c.
 „ finishes - - E. f.

Transit commences - - Tr. c.
 „ finishes - - Tr. f.

Occultation, immersion - Im.
 „ emersion - - Em.

Shadow commences - - Sh. c.
 „ finishes - - Sh. f.

SATELLITES OF JUPITER, 1928.

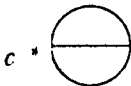
OCTOBER.

MEAN TIME.

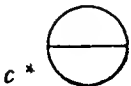
Configurations at 00 ^h 00 ^m .				
Day.	West.		East.	
1	4 [*]	1. ○ 3. 2		
2	4	○ 2 [*] 3		
3	4	2 [*] 1 ○ 3 [*]		
4	4	2 ○ 3 [*] 1		
5		3 [*] 4 1 ○ 2		
6	3 [*]	2 ○ 4		1 ○
		3. 2 ○ 1 4		
8		1. ○ 3. 2 4		
9		○ 1 2 [*] 3 4		
10		2 [*] 1 ○ 3 [*] 4 [*]		
11		2 ○ 3 [*] 1 4 [*]		
12		3 [*] 1 ○ 2 4		
13	3 [*]	○ 1 [*] 2 [*] 4 [*]		
14		3 2 [*] 4 ○ 6 1		
15		4 1 [*] ○ 3 [*] 2		
16	4	○ 1 2 [*] 3		
17	4 [*]	1 [*] 2 [*] ○ 3 [*]		
18	4	2 ○ 1 [*] 3 [*]		
19	4	3 [*] 1 ○ 2		
20		4 3 [*] ○ 1 [*] 2 [*]		
21		3 2 [*] 4 ○ 1		
22	○ 2	3 [*] 1 ○ 4		
23		○ 1 2 [*] 3 4		
24		1 [*] 2 [*] ○ 3 [*] 4		
25		2 ○ 1 [*] 3 [*] 4		
26		1 3 [*] ○ 2 4		
27		3 [*] 1 [*] 2 [*] ○ 4 [*]		
28		3 2 [*] 1 ○ 4 [*]		
29		3 2 [*] ○ 4 [*] 1 ○		
30		○ 1 4 [*] 2 [*] 3		
31		4 1 [*] 2 [*] ○ 3		

PHASES OF THE ECLIPSES.

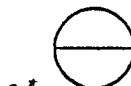
I.



II.




III.



IV.

No Eclipse



of this Satellite.

NOVEMBER.

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
1	I. Tr. c.	12 11	8	II. Im.	17 26	16	III. Tr. c.	04 33	23	III. Tr. f.	09 22
	I. Sh. c.	12 16		II. E. f.	20 13.1		III. Tr. f.	05 59		III. Sh. c.	10 18
	I. Tr. f.	14 19					III. Sh. c.	06 16		III. Sh. f.	12 08
	I. Sh. f.	14 26					III. Sh. f.	08 07		I. Im.	14 40
	II. Im.	15 13	9	III. Tr. c.	01 18		I. Im.	12 55		I. E. f.	17 29.7
	II. E. f.	17 37.7		III. Sh. c.	02 15		I. E. f.	15 34.3	24	I. Tr. c.	11 50
	III. Tr. c.	22 06		III. Tr. f.	02 39					I. Sh. c.	12 29
	III. Sh. c.	22 14		III. Sh. f.	04 06	17	I. Tr. c.	10 05		I. Tr. f.	13 58
	III. Tr. f.	23 21		I. Im.	11 11		I. Sh. c.	10 34		I. Sh. f.	14 39
				I. E. f.	13 39.0		I. Tr. f.	12 13		II. Tr. c.	16 49
2	III. Sh. f.	00 05					I. Sh. f.	12 44		II. Sh. c.	18 10
	I. Im.	09 27	10	I. Tr. c.	08 21		II. Tr. c.	14 31		II. Tr. f.	19 01
	I. E. f.	11 43.7		I. Sh. c.	08 39		II. Sh. c.	15 31		II. Sh. f.	20 26
				I. Tr. f.	10 29		II. Tr. f.	16 43	25	I. Im.	09 07
3	I. Tr. c.	06 37		I. Sh. f.	10 49		II. Sh. f.	17 48		I. E. f.	11 58.6
	I. Sh. c.	06 45		II. Tr. c.	12 15						
	I. Tr. f.	08 45		II. Sh. c.	12 53	18	I. Im.	07 21	26	I. Tr. c.	06 16
	I. Sh. f.	08 54		II. Tr. f.	14 26		I. E. f.	10 03.2		I. Sh. c.	06 58
	II. Tr. c.	10 00		II. Sh. f.	15 10					I. Tr. f.	08 25
	II. Sh. c.	10 15				19	I. Tr. c.	04 31		I. Sh. f.	09 07
	II. Tr. f.	12 10	11	I. Im.	05 37		I. Sh. c.	05 03		II. Im.	11 03
	II. Sh. f.	12 32		I. E. f.	08 07.9		I. Tr. f.	06 39		II. E. f.	14 42.7
							I. Sh. f.	07 12		III. Im.	21 31
4	I. Im.	03 53					II. Im.	08 47		III. Em.	23 08
	I. E. f.	06 12.6	12	I. Tr. c.	02 47		II. E. f.	12 06.7	27	III. E. c.	00 19.9
				I. Sh. c.	03 08		III. Im.	18 12		III. E. f.	02 11.8
5	I. Tr. c.	01 03		I. Tr. f.	04 55		III. Em.	19 44		I. Im.	03 33
	I. Sh. c.	01 13		I. Sh. f.	05 18		III. E. c.	20 18.0		I. E. f.	06 27.4
	I. Tr. f.	03 11		II. Im.	06 32		III. E. f.	22 10.3	28	I. Tr. c.	00 43
	I. Sh. f.	03 23		II. E. f.	09 30.9					I. Sh. c.	01 27
	II. Im.	04 19		III. Im.	14 55	20	I. Im.	01 48		I. Tr. f.	02 51
	II. E. f.	06 55.4		III. E. f.	18 08.1		I. E. f.	04 32.0		I. Sh. f.	03 36
	III. Im.	11 41					I. Tr. c.	22 57		II. Tr. c.	05 59
	III. E. f.	14 06.6	13	I. Im.	00 03		I. Sh. c.	23 32		II. Sh. c.	07 29
	I. Im.	22 19		I. E. f.	02 36.6					II. Tr. f.	08 12
				I. Tr. c.	21 13	21	I. Tr. f.	01 06	29	II. Sh. f.	09 45
6	I. E. f.	00 41.3		I. Sh. c.	21 37		I. Sh. f.	01 41		I. Im.	22 00
	I. Tr. c.	19 29		I. Tr. f.	23 21		II. Tr. c.	03 40		I. E. f.	00 56.4
	I. Sh. c.	19 42		I. Sh. f.	23 46		II. Sh. c.	04 51		I. Tr. c.	19 09
	I. Tr. f.	21 37					II. Tr. f.	05 52		I. Sh. c.	19 56
	I. Sh. f.	21 52	14	II. Tr. c.	01 24		II. Sh. f.	07 07		I. Tr. f.	21 18
	II. Tr. c.	23 08		II. Sh. c.	02 12		I. Im.	20 14		I. Sh. f.	22 05
	II. Sh. c.	23 34		II. Tr. f.	03 35		I. E. f.	23 00.9	30		
				II. Sh. f.	04 29					II. Im.	00 12
7	II. Tr. f.	01 18		I. Im.	18 29	22	I. Tr. c.	17 24		II. E. f.	04 00.7
	II. Sh. f.	01 51		I. E. f.	21 05.5		I. Sh. c.	18 00		III. Tr. c.	11 11
	I. Im.	16 45					I. Tr. f.	19 32		III. Tr. f.	12 48
	I. E. f.	19 10.2	15	I. Tr. c.	15 39		I. Sh. f.	20 10		III. Sh. c.	14 19
				I. Sh. c.	16 06		II. Im.	21 55		III. Sh. f.	16 09
8	I. Tr. c.	13 55		I. Tr. f.	17 47					I. Im.	16 26
	I. Sh. c.	14 11		I. Sh. f.	18 15	23	II. E. i.	01 24.6		I. E. f.	19 25.2
	I. Tr. f.	16 03		II. Im.	19 39		III. Tr. c.	07 50			
	I. Sh. f.	16 20		II. E. f.	22 48.8						

Eclipse commences - - E. c.
 „ finishes - - - E. f.

Transit commences - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - Im.
 „ emersion - - - Em.

Shadow commences - - Sh. c.
 „ finishes - - - Sh. f.

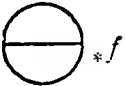
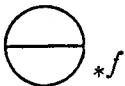

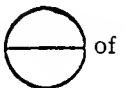
SATELLITES OF JUPITER, 1928.

NOVEMBER.

MEAN TIME.

Configurations at 22 ^h 30 ^m .					
Day.	West			East.	
1	4°	1°	○	2°	3○
2	4°	3°	○	1.2°	
3	4°	3°	2°	1°	○
4	4°	3°	2°	1°	○
5	○ 1°	4°	○	3°	2°
6		4°	1.2°	○	3°
7		2°	○	1.4°	3°
8		1°	○	3.2°	4°
9		3°	○	1.2°	4°
10		3°	2°	○	4°
11		3°	2°	○	1°
12			1°	○	3°
13	1°	○		2°	3°
14		2°	○	1°	4°
15		1°	4°	3°	○ 2°
16		4°	3°	○	1.2°
17		4°	3°	2°	○
18	4°	3°	2°	○	1°
19	4°		1°	○	3°
20	4°		1°	○	2°
21	4°	2°	○		3°
22	○ 2°	4°	1°	○	3°
23		3°	4°	○	1.2°
24		3°	1°	2°	○
25		3°	2°	○	1°
26			1°	○	2°
27			○	1°	2°
28	○ 1°	2°	○	3°	4°
29			1.2°	○	3°
30		3°	○	1°	2°

PHASES OF THE ECLIPSES.

I.		II.	
III.		IV.	No Eclipse  of this Satellite.

SATELLITES OF JUPITER 1928.

533

DECEMBER.

MEAN TIME.

Day.		h m	Day.		h m	Day.		h m	Day.		h m
1	I. Tr. c.	13 36	9	II. Sh. f.	01 42	17	II. Im.	18 04	25	III. Im.	11 35
	I. Sh. c.	14 24		I. Im.	12 41		II. E. f.	22 31.9		III. Em.	13 30
	I. Tr. f.	15 44		I. E. f.	15 49.7	18	III. Im.	07 56		I. E. f.	14 09.9
	I. Sh. f.	16 33					I. Im.	08 57		III. E. c.	16 27.6
	II. Tr. c.	19 08	10	I. Tr. c.	09 50		III. Em.	09 47	26	III. E. f.	18 18.4
	II. Sh. c.	20 48		I. Sh. c.	10 48		I. E. f.	12 14.2		I. Tr. c.	07 57
	II. Tr. f.	21 22		I. Tr. f.	11 59		III. E. c.	12 25.3		I. Sh. c.	09 08
	II. Sh. f.	23 04		I. Sh. f.	12 57		III. E. f.	14 16.4		I. Tr. f.	10 06
2	I. Im.	10 53		II. Im.	15 41	19				I. Sh. f.	11 17
	I. E. f.	13 54.1		II. E. f.	19 55.3		I. Tr. c.	06 06		II. Tr. c.	15 35
3	I. Tr. c.	08 03	11	III. Im.	04 23		I. Sh. c.	07 13		II. Tr. f.	17 51
	I. Sh. c.	08 53		III. Em.	06 10		I. Tr. f.	08 15		II. Sh. c.	18 02
	I. Tr. f.	10 11		I. Im.	07 08		I. Sh. f.	09 21		II. Sh. f.	20 17
	I. Sh. f.	11 02		III. E. c.	08 23.5		II. Tr. c.	13 07	27	I. Im.	05 15
	II. Im.	13 21		III. E. f.	10 14.9		II. Tr. f.	15 23		I. E. f.	08 38.9
	II. E. f.	17 18.8		I. E. f.	10 18.6		II. Sh. c.	15 24			
							II. Sh. f.	17 39	28	I. Tr. c.	02 24
4	III. Im.	00 55	12	I. Tr. c.	04 17	20	I. Im.	03 25		I. Sh. c.	03 37
	III. Em.	02 37		I. Sh. c.	05 17		I. E. f.	06 43.2		I. Tr. f.	04 33
	III. E. c.	04 21.8		I. Sh. f.	07 26					I. Sh. f.	05 46
	I. Im.	05 20		II. Tr. c.	10 42	21	I. Tr. c.	00 34		II. Im.	09 43
	III. E. f.	06 13.5		II. Sh. c.	12 46		I. Sh. c.	01 41		II. Em.	12 01
	I. E. f.	08 23.0		II. Tr. f.	12 57		I. Tr. f.	02 43		II. E. c.	12 11.1
				II. Sh. f.	15 01		I. Sh. f.	03 50		II. E. f.	14 27.2
							II. Im.	07 16		I. Im.	23 43
5	I. Tr. c.	02 29	13	I. Im.	01 35		II. Em.	09 33	29	III. Tr. c.	01 25
	I. Sh. c.	03 22		I. E. f.	04 47.5		II. E. c.	09 34.1		I. E. f.	03 07.8
	I. Tr. f.	04 38		I. Tr. c.	22 44		II. E. f.	11 50.3		III. Tr. f.	03 20
	I. Sh. f.	05 31		I. Sh. c.	23 46		III. Tr. c.	21 43		III. Sh. c.	06 28
	II. Tr. c.	08 19					I. Im.	21 52		III. Sh. f.	08 17
	II. Sh. c.	10 07	14	I. Tr. f.	00 53		III. Tr. f.	23 34		I. Tr. c.	20 52
	II. Tr. f.	10 33		I. Sh. f.	01 55	22	I. E. f.	01 12.1		I. Sh. c.	22 06
	II. Sh. f.	12 23		II. Im.	04 52		III. Sh. c.	02 26		I. Tr. f.	23 01
	I. Im.	23 47		II. E. f.	09 13.5		III. Sh. f.	04 14	30	I. Sh. f.	00 14
				III. Tr. c.	18 07		I. Tr. c.	19 07		II. Tr. c.	04 49
6	I. E. f.	02 51.9		III. Tr. f.	19 54		I. Sh. c.	20 10		II. Tr. f.	07 06
	I. Tr. c.	20 56		I. Im.	20 02		I. Tr. f.	21 10		II. Sh. c.	07 20
	I. Sh. c.	21 51		III. Sh. c.	22 24		I. Sh. f.	22 19		II. Sh. f.	09 35
	I. Tr. f.	23 05		I. E. f.	23 16.4					I. Im.	18 11
7	I. Sh. f.	00 00	15	III. Sh. f.	00 13	23	II. Tr. c.	02 20		I. E. f.	21 36.7
	II. Im.	02 31		I. Tr. c.	17 12		II. Tr. f.	04 36	31	I. Tr. c.	15 20
	II. E. f.	04 37.0		I. Sh. c.	18 15		II. Sh. c.	04 42		I. Sh. c.	16 35
	III. Tr. c.	14 36		I. Tr. f.	19 20		II. Sh. f.	06 57		I. Tr. f.	17 29
	III. Tr. f.	16 18		I. Sh. f.	20 24		I. Im.	16 20		I. Sh. f.	18 43
	I. Im.	18 14		II. Tr. c.	23 54		I. E. f.	19 41.0		II. Im.	22 58
	III. Sh. c.	18 21									
	III. Sh. f.	20 10	16	II. Sh. c.	02 04	24	I. Tr. c.	13 29	32	II. Em.	01 16
	I. E. f.	21 20.8		II. Tr. f.	02 09		I. Sh. c.	14 39		II. E. c.	01 29.7
				II. Sh. f.	04 20		I. Tr. f.	15 38		II. E. f.	03 45.9
8	I. Tr. c.	15 23		I. Im.	14 30		I. Sh. f.	16 48		I. Im.	12 39
	I. Sh. c.	16 20		I. E. f.	17 45.4		II. Im.	20 29		III. Im.	15 19
	I. Tr. f.	17 32	17	I. Tr. c.	11 39		II. Em.	22 47		I. E. f.	16 05.7
	I. Sh. f.	18 29		I. Sh. c.	12 44		II. E. c.	22 52.6		III. Em.	17 18
	II. Tr. c.	21 30		I. Tr. f.	13 48	25	II. E. f.	01 08.7		III. E. c.	20 29.9
	II. Sh. c.	23 26		I. Sh. f.	14 53		I. Im.	10 47		III. E. f.	22 20.7
	II. Tr. f.	23 44									

Eclipse commences - - E. c.
 „ finishes - - - E. f.

Transit commences - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - Im.
 „ emersion - - - Em.

Shadow commences - - Sh. c.
 „ finishes - - - Sh. f.

SATELLITES OF JUPITER, 1928.

DECEMBER.

MEAN TIME.

Configurations at 21 ^h 15 ^m .									
Day	West.					East.			
1	2		3	1	4				
2			3	2	4	1			
3			1	1	3	2			
4		4				1	2	3	
5		4		2	1			3	
6		1		2		3			1
7		4		3		2			1
8		4	3	1	2				
9			3	2		1			
10				3	4	2			
11						1	2	3	
12				2	1			3	4
13				2		1		3	4
14				3		2		4	1
15			3	1	2			4	
16			3	2		1		4	
17							4		1
18					4	1	2		
19			4	3	1			3	
20			4		2	1		3	
21		4			3		2		
22		4		3		2			
23		4		3	2		1		
24	1	4		3	1				
25			4			3	1	2	
26				1	2			3	
27				2		1		3	
28					1	3	2	4	
29			3		2			4	1
30			3	1				4	1
31				3	1	2		4	
32						1	2	4	1

PHASES OF THE ECLIPSES

I.



x f

II.



x f

III.



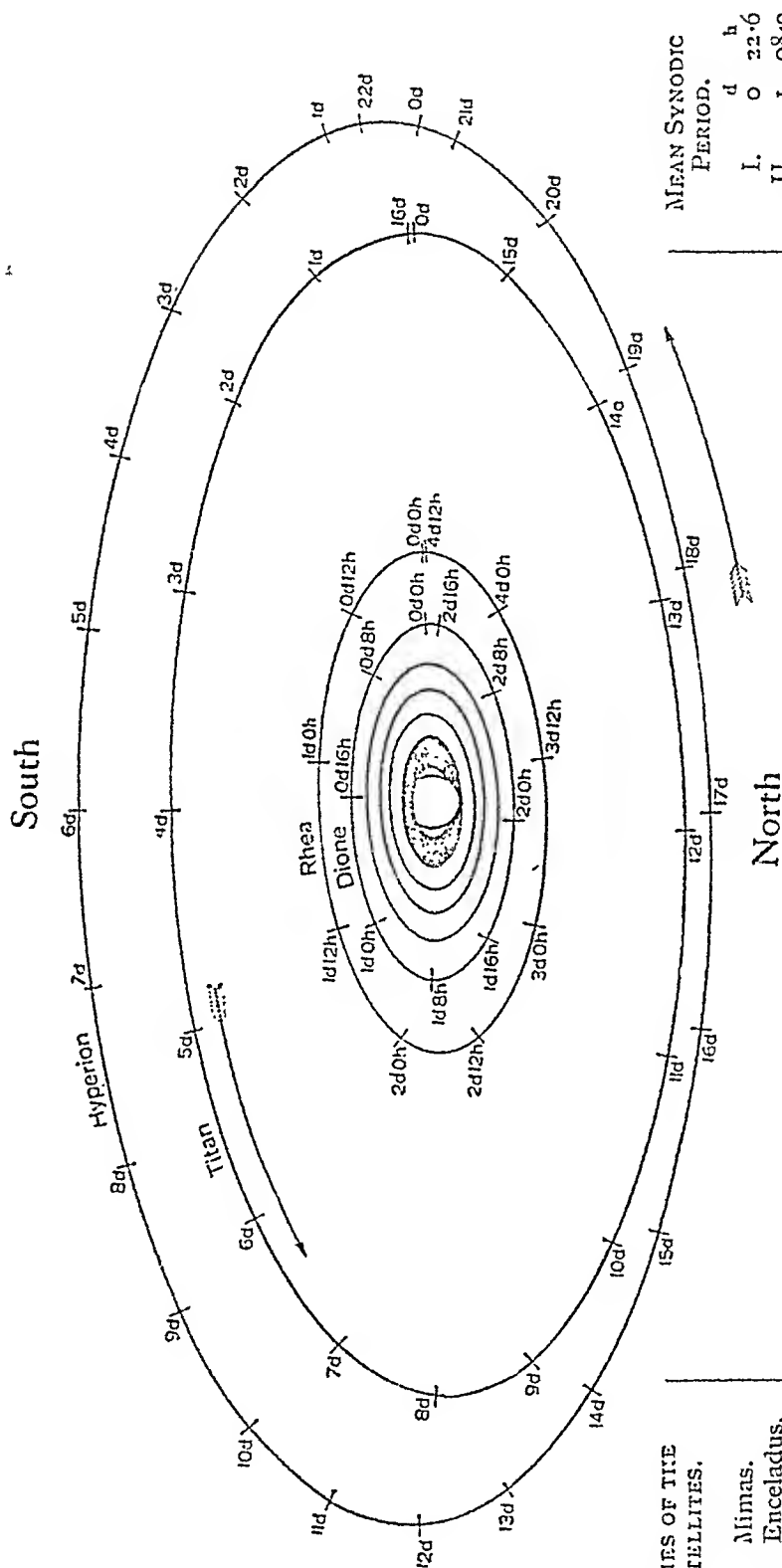
x c x f

IV

No Eclipse



of this Satellite



NAMES OF THE SATELLITES.

- I. Mimas.
- II. Enceladus.
- III. Tethys.
- IV. Dione.
- V. Rhea.
- VI. Titan.
- VII. Hyperion.
- VIII. Iapetus.
- IX. Phoebe.

MEAN SYNODIC PERIOD.

	d	h
I.	0	22.6
II.	1	08.9
III.	1	21.3
IV.	2	17.7
V.	4	12.5
VI.	15	23.3
VII.	21	07.6
VIII.	79	22.1
IX.	523	15.6

APPARENT ORBITS OF THE SEVEN INNER SATELLITES OF SATURN
AT DATE OF OPPOSITION, JUNE 6, 1928, AS SEEN IN AN INVERTING
TELESCOPE.

SATELLITES OF SATURN, 1928.

MIMAS.

Greenwich Mean Time of Eastern Elongation.

d	h	d	h	d	h	d	h	d	h	d	h
Feb. 1	10.6	Mar 13	21.9	Apr. 24	09.0	June 4	20.0	July 16	07.1	Aug. 26	18.3
2	09.2	14	20.5	25	07.6	5	18.6	17	05.7	27	16.9
3	07.8	15	19.1	26	06.2	6	17.3	18	04.3	28	15.5
4	06.4	16	17.7	27	04.9	7	15.9	19	02.9	29	14.1
5	05.1	17	16.3	28	03.5	8	14.5	20	01.6	30	12.7
6	03.7	18	15.0	29	02.1	9	13.1	21	00.2	31	11.4
7	02.3	19	13.6	30	00.7	10	11.7	21	22.8	Sept. 1	10.0
8	00.9	20	12.2	30	23.3	11	10.3	22	21.4	2	08.6
8	23.6	21	10.8	May 1	21.9	12	08.9	23	20.0	3	07.2
9	22.2	22	09.4	2	20.5	13	07.5	24	18.7	4	05.9
10	20.8	23	08.0	3	19.1	14	06.2	25	17.3	5	04.5
11	19.4	24	06.6	4	17.8	15	04.8	26	15.9	6	03.1
12	18.1	25	05.2	5	16.4	16	03.4	27	14.5	7	01.7
13	16.7	26	03.9	6	15.0	17	02.0	28	13.1	8	00.4
14	15.3	27	02.5	7	13.6	18	00.6	29	11.7	8	23.0
15	13.9	28	01.1	8	12.2	18	23.2	30	10.3	9	21.6
16	12.6	28	23.8	9	10.8	19	21.8	31	08.9	10	20.2
17	11.2	29	22.4	10	09.4	20	20.4	Aug. 1	07.6	11	18.9
18	09.8	30	21.0	11	08.0	21	19.1	2	06.2	12	17.5
19	08.4	31	19.6	12	06.6	22	17.7	3	04.8	13	16.1
20	07.0	Apr. 1	18.2	13	05.3	23	16.3	4	03.4	14	14.7
21	05.6	2	16.9	14	03.9	24	14.9	5	02.1	15	13.3
22	04.2	3	15.5	15	02.5	25	13.5	6	00.7	16	12.0
23	02.9	4	14.1	16	01.1	26	12.1	6	23.3	17	10.6
24	01.5	5	12.7	16	23.7	27	10.7	7	21.9	18	09.2
25	00.1	6	11.3	17	22.3	28	09.3	8	20.5	19	07.8
25	22.7	7	09.9	18	20.9	29	07.9	9	19.2	20	06.5
26	21.4	8	08.5	19	19.5	30	06.6	10	17.8	21	05.1
27	20.0	9	07.1	20	18.2	July 1	05.2	11	16.4	22	03.7
28	18.0	10	05.7	21	16.8	2	03.8	12	15.0	23	02.3
29	17.2	11	04.4	22	15.4	3	02.4	13	13.6	24	01.0
Mar. 1	15.8	12	03.0	23	14.0	4	01.1	14	12.2	24	23.6
2	14.5	13	01.6	24	12.6	4	23.7	15	10.8	25	22.2
3	13.1	14	00.2	25	11.2	5	22.3	16	09.4	26	20.8
4	11.7	14	22.9	26	09.8	6	20.9	17	08.1	27	19.5
5	10.3	15	21.5	27	08.4	7	19.5	18	06.7	28	18.1
6	08.9	16	20.1	28	07.0	8	18.2	19	05.3	29	16.7
7	07.5	17	18.7	29	05.7	9	16.8	20	03.9	30	15.3
8	06.1	18	17.3	30	04.3	10	15.4	21	02.6	Oct. 1	13.9
9	04.7	19	16.0	31	02.9	11	14.0	22	01.2	2	12.5
10	03.4	20	14.6	June 1	01.5	12	12.6	22	23.8		
11	02.0	21	13.2	2	00.2	13	11.2	23	22.4		
12	00.6	22	11.8	2	22.8	14	09.8	24	21.0		
12	23.2	23	10.4	3	21.4	15	08.4	25	19.7		

ENCELADUS.

Greenwich Mean Time of Eastern Elongation.

Feb.	d h	Mar.	d h	Apr.	d h	June	d h	July	d h	Aug.	d h
	2 23.6		13 17.4		22 10.9		1 04.4		10 21.7		19 15.4
	4 08.5		15 02.3		23 19.8		2 13.2		12 06.6		21 00.3
	5 17.4		16 11.2		25 04.7		3 22.1		13 15.5		22 09.1
	7 02.3		17 20.1		26 13.6		5 07.0		15 00.4		23 18.0
	8 11.2		19 04.9		27 22.4		6 15.9		16 09.2		25 02.9
	9 20.1		20 13.8		29 07.3		8 00.7		17 18.1		26 11.8
	11 05.0		21 22.7		30 16.2		9 09.6		19 03.0		27 20.7
	12 13.8		23 07.6	May	2 01.1		10 18.5		20 11.9		29 05.6
	13 22.7		24 16.5		3 10.0		12 03.3		21 20.8		30 14.5
	15 07.6		26 01.4		4 18.9		13 12.2		23 05.7		31 23.4
	16 16.5		27 10.2		6 03.7		14 21.1		24 14.5	Sept.	2 08.3
	18 01.4		28 19.1		7 12.6		16 06.0		25 23.4		3 17.2
	19 10.3		30 04.0		8 21.5		17 14.8		27 08.3		5 02.1
	20 19.2		31 12.9		10 06.4		18 23.7		28 17.2		6 10.9
	22 04.1	Apr.	1 21.8		11 15.2		20 08.6		30 02.1		7 19.8
	23 13.0		3 06.7		13 00.1		21 17.5		31 11.0		9 04.7
	24 21.9		4 15.5		14 09.0		23 02.3	Aug.	1 19.8		10 13.6
	26 06.8		6 00.4		15 17.9		24 11.2		3 04.7		11 22.5
	27 15.6		7 09.3		17 02.7		25 20.1		4 13.6		13 07.4
	29 00.5		8 18.2		18 11.6		27 05.0		5 22.5		14 16.3
Mar.	1 09.4		10 03.0		19 20.5		28 13.8		7 07.4		16 01.2
	2 18.3		11 11.9		21 05.4		29 22.7		8 16.3		17 10.1
	4 03.2		12 20.8		22 14.2	July	1 07.6		10 01.1		18 19.0
	5 12.1		14 05.7		23 23.1		2 16.5		11 10.0		20 03.9
	6 21.0		15 14.5		25 08.0		4 01.3		12 18.9		21 12.8
	8 05.9		16 23.4		26 16.9		5 10.2		14 03.8		22 21.7
	9 14.8		18 08.3		28 01.7		6 19.1		15 12.7		24 06.6
	10 23.6		19 17.2		29 10.6		8 04.0		16 21.6		25 15.5
	12 08.5		21 02.0		30 19.5		9 12.8		18 06.5		27 00.4

TETHYS.

Greenwich Mean Time of Eastern Elongation.

Feb.	d h	Mar.	d h	Apr.	d h	June	d h	July	d h	Aug.	d h
	3 17.4		14 09.1		23 00.6		1 15.6		11 06.6		19 21.9
	5 14.7		16 06.4		24 21.9		3 12.9		13 03.9		21 19.3
	7 12.0		18 03.7		26 19.1		5 10.2		15 01.2		23 16.6
	9 09.3		20 01.0		28 16.4		7 07.4		16 22.5		25 13.9
	11 06.7		21 22.3		30 13.7		9 04.7		18 19.8		27 11.2
	13 04.0		23 19.6	May	2 11.0		11 02.0		20 17.1		29 08.5
	15 01.3		25 16.9		4 08.2		12 23.3		22 14.4		31 05.8
	16 22.6		27 14.2		6 05.5		14 20.6		24 11.7	Sept.	2 03.1
	18 20.0		29 11.5		8 02.8		16 17.9		26 09.0		4 00.4
	20 17.3		31 08.9		10 00.1		18 15.1		28 06.3		5 21.8
	22 14.6	Apr.	2 06.2		11 21.4		20 12.4		30 03.6		7 19.2
	24 11.9		4 03.5		13 18.7		22 09.7	Aug.	1 00.9		9 16.5
	26 09.3		6 00.8		15 16.0		24 07.0		2 22.2		11 13.8
	28 06.6		7 22.1		17 13.3		26 04.3		4 19.5		13 11.1
Mar.	1 04.0		9 19.4		19 10.6		28 01.6		6 16.8		15 08.4
	3 01.3		11 16.7		21 07.8		29 22.9		8 14.1		17 05.7
	4 22.6		13 14.0		23 05.1	July	1 20.2		10 11.4		19 03.0
	6 19.9		15 11.4		25 02.4		3 17.4		12 08.7		21 00.3
	8 17.2		17 08.7		26 23.7		5 14.6		14 06.0		22 21.7
	10 14.5		19 06.0		28 21.0		7 12.0		16 03.3		24 19.0
	12 11.8		21 03.3		30 18.3		9 09.3		18 00.6		26 16.3

SATELLITES OF SATURN, 1928.

DIONE.

Greenwich Mean Time of Eastern Elongation.

	d	h		d	h		d	h		d	h		d	h			
Feb.	2	16.7	Mar.	14	18.4	Apr.	24	19.5	June	4	20.2	July	15	21.0	Aug.	25	22.2
	5	10.4		17	12.0		27	13.2		7	13.9		18	14.7		28	15.9
	8	01.1		20	05.7		30	06.8		10	07.5		21	08.3		31	09.6
	10	21.8		22	23.4	May	3	00.5		13	01.1		24	02.0	Sept.	3	03.3
	13	15.6		25	17.1		5	18.1		15	18.8		26	19.6		5	21.0
	16	09.3		28	10.8		8	11.8		18	12.4		29	13.3		8	14.7
	19	03.0		31	04.5		11	05.4		21	06.1	Aug.	1	07.0		11	08.4
	21	00.7	Apr.	2	22.1		13	23.1		23	23.7		4	00.7		14	02.1
	24	14.4		5	15.8		16	16.7		26	17.4		6	18.3		16	19.8
	27	08.1		8	09.5		19	10.4		29	11.0		9	12.0		19	13.5
Mar.	1	01.9		11	03.2		22	04.0	July	2	04.7		12	05.7		22	07.3
	3	19.6		13	20.9		24	21.7		4	22.3		14	23.4		25	01.0
	6	13.3		16	14.5		27	15.3		7	16.0		17	17.1		27	18.8
	9	07.0		19	08.2		30	08.9		10	09.6		20	10.8		30	12.5
	12	00.7		22	01.8	June	2	02.6		13	03.3		23	04.5	Oct.	3	06.2

RHEA.

Greenwich Mean Time of Eastern Elongation.

	d	h		d	h		d	h		d	h		d	h		d	h
Feb.	5	21.1	Mar.	17	13.5	Apr.	27	05.1	June	6	20.0	July	17	11.0	Aug.	27	02.6
	10	09.6		22	02.0	May	1	17.4		11	08.3		21	23.3		31	15.0
	14	22.2		20	14.4		6	05.8		15	20.6		26	11.7	Sept.	5	03.5
	19	10.7		31	12.8		10	18.1		20	09.0		31	00.0		9	15.9
	23	23.2	Apr.	4	15.2		15	06.4		24	21.3	Aug.	4	12.4		14	04.4
	28	11.7		9	03.6		19	18.7		29	09.6		9	00.8		18	16.9
Mar.	4	07.1		13	16.0		24	07.0	July	3	21.9		13	13.2		23	05.4
	8	12.0		18	04.3		28	19.3		8	10.3		18	01.7		27	17.9
	11	01.1		21	10.7	June	2	07.7		12	22.6		22	14.1	Oct.	2	06.4

TITAN.

Greenwich Mean Time of Greatest Elongation.

	d	h		d	h		d	h		d	h		d	h			
Feb.	7	21.3W	Mar.	18	14.8E	Apr.	27	10.2W	June	6	04.5E	July	16	03.4W	Aug.	24	18.3E
	15	14.9E		20	19.4W	May	5	09.6E		14	08.4W		23	21.3E	Sept.	1	22.8W
	23	21.3W		31	13.6E		13	13.8W		22	01.9E	Aug.	1	01.4W		9	17.5E
Mar.	2	15.0E		11	18.2W		21	07.2E		30	05.7W		8	19.6E		17	22.3W
	10	20.3W		19	11.8E		20	11.1W	July	7	23.4E		16	23.8W			

HYPERION.

Greenwich Mean Time of Greatest Elongation.

	d	h		d	h		d	h		d	h		d	h		d	h
Feb	7	15.6E	Mar.	21	06.5E	May	3	00.9E	June	14	15.0E	July	27	06.0E	Sept.	8	00.1E
	19	23.8W	Apr.	2	17.4W		15	08.8W		26	22.5W	Aug.	8	13.9W		20	08.8W
	29	00.6E		11	17.6E		24	08.0E	July	5	22.1E		17	14.8E			
Mar.	12	09.0W		24	01.8W	June	5	15.6W		18	05.9W		29	23.1W			

IAPETUS.

Greenwich Mean Time of Conjunction and Greatest Elongation.

d h		d h		d h		d h		d h		d h	
Feb. 20	02.2S	Mar. 29	13.8I	May 9	09.1S	June 16	00.4I	July 26	14.0S	Sept. 2	19.5I
Mar. 10	12.6E	Apr. 18	21.7W	28	08.6E	July 6	01.4W	Aug. 14	20.0E		

RINGS OF SATURN, 1928.

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ELEMENTS FOR DETERMINING THE GEOCENTRIC POSITION,
APPEARANCE, AND MAGNITUDE OF SATURN'S RINGS.

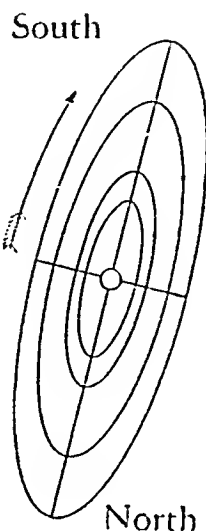
Ob	a	b	P	B	U	ω	B'	U'	Stellar Mag.
Jan 1	34°48	+15°35	+4 19.7	+26 26.6	126 30.8	42 04.6	+26 10.2	81 42.9	+0.7
9	34°70	15°46	4 25.8	26 28.6	127.28.8	42 04.5	26 11.6	81 59.0	0.7
17	34°95	15°59	4 31.4	26 30.0	128 23.8	42 04.5	26 13.0	82 15.1	0.7
25	35°25	15°74	4 36.7	26 30.8	129 15.1	42 04.5	26 14.3	82 31.3	0.7
Feb 2	35°60	15°90	4 41.4	26 31.2	130 02.0	42 04.4	26 15.7	82 47.4	0.7
10	35°99	+16°07	+4 45.6	+26 31.1	130 44.2	42 04.4	+26 17.0	83 03.6	+0.7
18	36°42	16°26	4 49.2	26 30.7	131 20.8	42 04.4	26 18.2	83 19.8	0.7
26	36°87	16°46	4 52.2	26 30.2	131 51.5	42 04.3	26 19.5	83 35.9	0.7
Mar 5	37°36	16°67	4 54.5	26 29.5	132 15.8	42 04.3	26 20.8	83 52.1	0.7
13	37°86	16°88	4 56.2	26 28.6	132 33.4	42 04.2	26 22.0	84 08.2	0.6
21	38°38	+17°10	+4 57.1	+26 27.7	132 43.9	42 04.2	+26 23.2	84 24.4	+0.6
29	38°89	17°35	4 57.4	26 26.8	132 47.2	42 04.1	26 24.3	84 40.6	0.6
Apr 6	39°39	17°54	4 57.1	26 26.1	132 43.4	42 04.1	26 25.4	84 56.8	0.5
14	39°87	17°75	4 55.9	26 25.4	132 32.7	42 04.1	26 26.5	85 12.9	0.5
22	40°32	17°94	4 54.3	26 25.0	132 15.4	42 04.1	26 27.6	85 29.1	0.4
30	40°72	+18°11	+4 52.0	+26 24.5	131 52.1	42 04.0	+26 28.6	85 45.3	+0.4
May 8	41°05	18°26	4 49.1	26 24.1	131 23.3	42 04.0	26 29.6	86 01.5	0.4
16	41°32	18°37	4 45.9	26 23.8	130 50.2	42 03.9	26 30.6	86 17.6	0.3
24	41°52	18°45	4 42.2	26 23.3	130 13.7	42 03.9	26 31.5	86 33.8	0.3
Jun 1	41°62	18°49	4 38.3	26 23.0	129 34.9	42 03.9	26 32.4	86 50.0	0.2
9	41°65	+18°51	+4 34.4	+26 22.7	128 55.2	42 03.8	+26 33.2	87 06.2	+0.2
17	41°59	18°47	4 30.3	26 22.4	128 15.8	42 03.8	26 34.1	87 22.4	0.2
25	41°43	18°40	4 26.5	26 22.2	127 38.2	42 03.8	26 34.9	87 38.6	0.3
Jul 3	41°20	18°30	4 22.9	26 22.0	127 03.2	42 03.7	26 35.6	87 54.8	0.3
11	40°90	18°16	4 19.7	26 22.1	126 32.2	42 03.7	26 36.4	88 11.0	0.4
19	40°53	+18°00	+4 16.9	+26 22.5	126 06.0	42 03.7	+26 37.1	88 27.2	+0.4
27	40°11	17°53	4 14.8	26 23.0	125 45.4	42 03.6	26 37.7	88 43.4	0.5
Aug 4	39°65	17°64	4 13.3	26 23.9	125 31.0	42 03.6	26 38.4	88 59.6	0.5
12	39°17	17°43	4 12.5	26 25.3	125 23.2	42 03.5	26 39.0	89 15.8	0.6
20	38°67	17°22	4 12.4	26 26.9	125 22.1	42 03.5	26 39.6	89 32.0	0.6
28	38°15	+17°01	+4 13.1	+26 28.9	125 28.1	42 03.5	+26 40.1	89 48.2	+0.6
Sep 5	37°64	16°81	4 14.5	26 31.1	125 41.0	42 03.4	26 40.7	90 04.4	0.7
13	37°15	16°61	4 16.6	26 33.7	126 00.5	42 03.4	26 41.2	90 20.6	0.7
21	36°68	16°42	4 19.4	26 36.4	126 26.6	42 03.3	26 41.6	90 36.9	0.7
29	36°23	16°25	4 22.9	26 39.2	126 58.9	42 03.3	26 42.1	90 53.1	0.7
Oct 7	35°82	+16°09	+4 26.9	+26 41.9	127 36.7	42 03.3	+26 42.4	91 09.3	+0.7
15	35°44	15°95	4 31.3	26 44.5	128 19.8	42 03.2	26 42.8	91 25.5	0.7
23	35°10	15°82	4 36.3	26 46.9	129 07.6	42 03.2	26 43.2	91 41.7	0.7
31	34°81	15°70	4 41.6	26 49.0	129 59.5	42 03.2	26 43.5	91 57.9	0.7
Nov 8	34°56	15°61	4 47.2	26 50.8	130 54.9	42 03.1	26 43.7	92 14.1	0.7
16	34°36	+15°53	+4 52.9	+26 51.9	131 53.3	42 03.1	+26 44.0	92 30.3	+0.7
24	34°21	15°46	4 58.9	26 52.6	132 54.1	42 03.0	26 44.2	92 46.5	0.7
Dec 2	34°11	15°42	5 04.8	26 52.6	133 56.3	42 03.0	26 44.4	93 02.7	0.7
10	34°05	15°39	5 10.7	26 52.1	134 59.5	42 03.0	26 44.6	93 18.9	0.6
18	34°06	15°38	5 16.6	26 50.9	136 03.1	42 02.9	26 44.7	93 35.1	0.6
26	34°12	+15°39	+5 22.3	+26 49.3	137 06.4	42 02.9	+26 44.8	93 51.3	+0.7
34	34°21	+15°42	+5 27.8	+26 46.9	138 08.5	42 02.9	+26 44.9	94 07.5	+0.7

(12961)

2 N 2

SATELLITES OF URANUS, 1928.

APPARENT ORBITS OF THE SATELLITES OF URANUS AT DATE OF
OPPOSITION, SEPTEMBER 28, 1928,
AS SEEN IN AN INVERTING TELESCOPE.



GREENWICH MEAN TIME OF GREATEST ELONGATION.

ARIEL.		UMBRIEL.		TITANIA.		OBERON.
North.	South.	North.	South.	North.	South.	North and South.
d h	d h	d h	d h	d h	d h	d h
June 27 15.9	July 11 20 12.6	June 12 15.2	June 14 16.9	May 30 07.8	June 3 16.2	July 16 03.4 N.
July 3 15.4	July 7 00.1	20 22.1	22 23.8	June 8 00.7	12 09.1	22 20.9 S.
12 18.8	14 13.5	29 05.0	July 1 06.7	16 17.6	21 02.1	29 14.5 N.
18 08.3	22 03.0	July 7 11.0	9 13.6	25 10.5	29 19.0	Aug. 5 08.0 S.
25 21.7	30 16.4	15 18.8	17 20.5	July 4 03.4	July 8 11.9	12 01.6 N.
Aug. 2 11.2	Aug. 6 05.9	24 01.7	26 03.4	12 20.3	17 04.8	18 19.2 S.
10 00.0	13 10.1	Aug. 1 08.6	Aug. 3 10.3	21 13.3	25 21.7	25 12.8 N.
17 14.1	21 08.8	9 15.5	11 17.2	30 06.2	Aug. 3 14.7	Sept. 1 06.3 S.
25 03.6	28 22.3	17 22.4	20 00.2	Aug. 7 23.1	12 07.6	7 23.9 N.
Sept. 1 17.0	Sept. 5 11.8	26 05.4	28 07.1	16 16.1	21 00.6	14 17.5 S.
9 06.5	13 01.2	Sept. 3 12.3	Sept. 5 14.0	25 09.0	29 17.5	21 11.1 N.
16 20.0	20 14.7	11 19.2	13 20.9	Sept. 3 02.0	Sept. 7 10.5	28 04.7 S.
24 09.4	28 04.2	20 02.1	22 03.9	11 19.0	16 03.4	Oct. 4 22.3 N.
Oct. 1 22.9	Oct. 5 17.6	28 00.1	30 10.8	20 11.9	24 20.4	11 15.9 S.
9 12.4	13 07.1	Oct. 6 16.0	Oct. 8 17.7	29 04.9	Oct. 3 13.4	18 09.5 N.
17 01.8	20 20.6	14 22.9	17 00.7	Oct. 7 21.9	12 06.4	25 03.1 S.
24 15.3	28 10.1	23 05.9	25 07.6	16 14.8	20 23.3	31 20.7 N.
Nov. 1 04.8	Nov. 4 23.6	31 12.8	Nov. 2 14.5	25 07.8	29 16.3	Nov. 7 14.3 S.
8 18.3	12 13.0	Nov. 8 19.8	10 21.5	Nov. 3 00.8	Nov. 7 09.3	14 07.9 N.
16 07.8	20 02.5	17 02.7	19 04.4	11 17.8	16 02.2	21 01.5 S.
Dec. 23 21.3	Dec. 27 16.0	25 09.6	27 11.4	20 10.7	24 19.2	27 19.0 N.
1 10.8	Dec. 5 05.5	Dec. 3 16.6	Dec. 5 18.3	29 03.7	Dec. 3 12.2	Dec. 4 12.6 S.
9 00.2	12 19.0	11 23.5	14 01.2	Dec. 7 20.7	12 05.1	11 06.2 N.
16 13.7	20 08.5	20 06.4	22 08.2	16 13.6	20 22.1	17 23.8 S.
24 02.2	27 21.9	28 13.4	30 15.1	25 06.6	29 15.0	24 17.3 N.

In the above diagram the central circle represents the planet.

For Ariel every third greatest elongation is given, and for Umbriel every alternate one; the intermediate ones may be found by adding multiples of the period of the satellite.

Sidereal period of Ariel, 2^d 12^h 48^m; of Umbriel, 4^d 03^h 46^m; of Titania, 8^d 16^h 94^m; of Oberon, 13^d 11^h 11^m.

SATELLITES OF URANUS, 1928.

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Time from Northern Elongation.		ARIEL.		UMBRIEL.		Time from Northern Elongation.		TITANIA.		Time from Northern Elongation.		OBERON.	
		p^1	F	p^1	F			p^1	F			p^1	F
d	h	°		°		d	h	°		d	h	°	
0	00	345.0	1.000	345.0	1.000	0	00	345.0	1.000	0	00	345.0	1.000
0	02	341.2	0.981	342.7	0.993	0	05	342.2	0.990	0	08	342.1	0.989
0	04	337.0	0.924	340.3	0.971	0	10	339.4	0.960	0	16	339.2	0.957
0	06	332.1	0.833	337.8	0.936	0	15	336.2	0.911	1	00	335.9	0.904
0	08	325.8	0.714	335.0	0.888	0	20	332.7	0.844	1	08	332.2	0.833
0	10	316.6	0.576	331.9	0.829	1	01	328.4	0.762	1	16	327.6	0.747
0	12	301.6	0.438	328.2	0.758	1	06	323.1	0.668	2	00	321.8	0.647
0	14	275.2	0.337	323.8	0.680	1	11	315.9	0.567	2	08	313.7	0.542
0	16	239.0	0.329	318.1	0.596	1	16	305.5	0.466	2	16	301.8	0.440
0	18	210.9	0.423	310.5	0.510	1	21	289.8	0.378	3	00	283.5	0.356
0	20	194.8	0.559	299.9	0.428	2	02	266.9	0.324	3	08	257.7	0.318
0	22	185.1	0.698	284.9	0.361	2	07	240.3	0.327	3	16	231.0	0.344
1	00	178.5	0.820	264.8	0.322	2	12	218.2	0.386	4	00	211.2	0.421
1	02	173.5	0.915	242.3	0.325	2	17	203.2	0.477	4	08	198.3	0.522
1	04	169.3	0.976	222.7	0.369	2	22	193.3	0.578	4	16	189.6	0.627
1	06	165.5	1.000	208.4	0.438	3	03	186.3	0.678	5	00	183.4	0.728
1	08	161.6	0.985	198.3	0.521	3	08	180.7	0.771	5	08	178.7	0.818
1	10	157.6	0.933	191.0	0.607	3	13	176.9	0.852	5	16	174.8	0.892
1	12	152.8	0.846	185.6	0.691	3	18	173.4	0.917	6	00	171.4	0.948
1	14	146.7	0.730	181.2	0.768	3	23	170.3	0.964	6	08	168.4	0.984
1	16	138.0	0.594	177.7	0.837	4	04	167.5	0.992	6	16	165.6	1.000
1	18	123.9	0.454	174.6	0.896	4	09	164.7	1.000	7	00	162.7	0.993
1	20	99.2	0.345	171.9	0.942	4	14	161.9	0.988	7	08	159.8	0.965
1	22	63.3	0.323	169.4	0.975	4	19	159.1	0.955	7	16	156.6	0.916
2	00	33.6	0.408	166.9	0.995	5	00	155.9	0.904	8	00	152.9	0.849
2	02	16.3	0.542	164.7	1.000	5	05	152.3	0.836	8	08	148.6	0.765
2	04	6.1	0.682	162.4	0.991	5	10	147.9	0.752	8	16	143.0	0.668
2	06	359.3	0.806	160.0	0.968	5	15	142.4	0.658	9	00	135.5	0.563
2	08	354.1	0.904	157.4	0.931	5	20	134.9	0.556	9	08	124.5	0.459
2	10	349.8	0.970	154.6	0.881	6	01	124.1	0.456	9	16	117.7	0.370
2	12	345.9	0.999	151.4	0.820	6	06	107.7	0.370	10	00	83.2	0.320
2	14	342.1	0.989	147.7	0.748	6	11	84.2	0.322	10	08	55.9	0.334
2	16			143.1	0.669	6	16	57.6	0.331	10	16	34.5	0.404
2	18			137.2	0.584	6	21	36.3	0.395	11	00	20.4	0.501
2	20			129.3	0.498	7	02	22.0	0.487	11	08	11.1	0.607
2	22			118.2	0.418	7	07	12.4	0.589	11	16	4.5	0.709
3	00			102.5	0.354	7	12	5.7	0.689	12	00	359.5	0.801
3	02			81.8	0.320	7	17	0.6	0.781	12	08	355.5	0.879
3	04			59.4	0.329	7	22	356.5	0.859	12	16	352.1	0.939
3	06			40.5	0.377	8	03	353.1	0.923	13	00	349.0	0.979
3	08			26.8	0.449	8	08	350.0	0.968	13	08	346.1	0.998
3	10			17.2	0.533	8	13	347.2	0.994	13	16	343.3	0.996
3	12			10.2	0.618	8	18	344.4	1.000				
3	14			4.9	0.702								
3	16			0.7	0.778								
3	18			357.2	0.846								
3	20			354.2	0.903								
3	22			351.5	0.947								
4	00			349.0	0.979								
4	02			346.7	0.996								
4	04			344.4	1.000								

Position angle of satellite $p = p^1 + (P - P_0)$.

Apparent distance of satellite $s = F \frac{a(p)}{p}$.

SATELLITES OF URANUS, 1928.

FOR ^{oh} GREENWICH MEAN TIME.

Date.	$P-P_0$	$\frac{a(\rho)}{\rho}$				Date.	$P-P_0$	$\frac{a(\rho)}{\rho}$			
		Ariel.	Umbriel.	Titania.	Oberon.			Ariel.	Umbriel.	Titania.	Oberon.
May 10	-0.2	12.7	17.7	29.1	38.9	Sept. 7	-0.2	13.8	19.3	31.6	42.3
15	0.2	12.8	17.8	29.1	39.0	12	0.2	13.8	19.3	31.6	42.3
20	0.1	12.8	17.8	29.2	39.1	17	0.2	13.9	19.3	31.7	42.3
25	0.1	12.8	17.9	29.3	39.2	22	0.2	13.9	19.3	31.7	42.4
30	0.1	12.9	17.9	29.4	39.4	27	0.2	13.9	19.3	31.7	42.4
June 4	-0.1	12.9	18.0	29.5	39.5	Oct. 2	-0.2	13.9	19.3	31.7	42.4
9	0.1	13.0	18.1	29.7	39.7	7	0.2	13.9	19.3	31.7	42.4
14	0.1	13.0	18.2	29.8	39.8	12	0.3	13.9	19.3	31.7	42.3
19	0.1	13.1	18.2	29.9	40.0	17	0.3	13.8	19.3	31.6	42.3
24	0.1	13.1	18.3	30.0	40.2	22	0.3	13.8	19.2	31.6	42.2
July 27	-0.1	13.2	18.4	30.1	40.3	Nov. 27	-0.3	13.8	19.2	31.5	42.1
4	-0.1	13.2	18.4	30.3	40.5	1	0.3	13.7	19.2	31.4	42.0
9	0.0	13.3	18.5	30.4	40.6	6	0.3	13.7	19.1	31.3	41.9
14	-0.1	13.4	18.6	30.5	40.8	11	0.3	13.7	19.0	31.2	41.8
19	0.1	13.4	18.7	30.6	41.0	16	0.3	13.6	19.0	31.1	41.7
Aug 24	-0.1	13.5	18.8	30.8	41.2	21	-0.3	13.6	18.9	31.0	41.5
29	0.1	13.5	18.8	30.9	41.3	26	0.3	13.5	18.8	30.9	41.4
3	0.1	13.6	18.9	31.0	41.5	Dec. 1	0.3	13.5	18.8	30.8	41.2
8	0.1	13.6	19.0	31.1	41.6	6	0.3	13.4	18.7	30.7	41.0
13	0.1	13.7	19.0	31.2	41.7	11	0.3	13.4	18.6	30.5	40.8
18	-0.1	13.7	19.1	31.3	41.9	16	-0.3	13.3	18.5	30.4	40.7
23	0.1	13.7	19.1	31.4	42.0	21	0.3	13.2	18.5	30.3	40.5
28	0.1	13.8	19.2	31.5	42.1	26	0.3	13.2	18.4	30.2	40.3
Sept. 2	-0.2	13.8	19.2	31.5	42.2	31	-0.3	13.1	18.3	30.0	40.2

SATELLITE OF NEPTUNE, 1928.

Time from Epoch	P	F	Time from Epoch	P	F	Date.	$P-P_0$	$\frac{a(\rho)}{\rho}$	Date.	$P-P_0$	$\frac{a(\rho)}{\rho}$
0 00	143.0	0.000	3 00	321.1	0.998	Jan. 1	+0.4	16.6	Apr. 30	-1.4	16.4
0 03	139.1	0.993	3 03	317.1	0.984	6	0.3	16.6	May 5	1.4	16.3
0 06	135.0	0.974	3 06	313.0	0.960	11	0.2	16.6	10	1.4	16.3
0 09	130.8	0.942	3 09	308.6	0.922	16	0.2	16.6	15	1.4	16.2
0 12	126.2	0.899	3 12	303.7	0.875	21	+0.2	16.7	20	1.4	16.2
0 15	121.0	0.846	3 15	298.2	0.818	26	0.0	16.7	25	-1.4	16.1
0 18	115.2	0.787	3 18	291.9	0.755	31	-0.1	16.7	30	-1.4	16.1
0 21	108.3	0.722	3 21	284.4	0.690	Feb. 5	0.2	16.7	Oct. 17	+1.6	15.9
0 24	100.7	0.657	4 00	275.3	0.627	10	0.3	16.7	22	1.7	15.9
1 03	90.0	0.597	4 03	264.4	0.572	15	0.4	16.7	27	+1.8	16.0
1 06	78.0	0.548	4 06	251.4	0.531	20	-0.5	16.7	Nov. 1	1.8	16.0
1 09	64.2	0.520	4 09	236.9	0.512	25	0.6	16.7	6	1.9	16.0
1 12	49.3	0.512	4 12	222.0	0.518	Mar. 1	0.7	16.7	11	2.0	16.1
1 15	31.8	0.531	4 15	205.1	0.548	6	0.7	16.7	16	2.0	16.1
1 18	21.8	0.571	4 18	196.1	0.577	11	0.8	16.7	21	+2.0	16.2
1 21	10.8	0.626	4 21	186.1	0.656	16	-1.0	16.7	26	2.0	16.2
2 00	1.7	0.689	5 00	177.8	0.721	21	1.0	16.7	31	2.0	16.3
2 03	351.2	0.754	5 03	170.9	0.786	26	1.1	16.6	Dec. 1	2.0	16.3
2 06	347.8	0.817	5 06	165.1	0.846	31	1.2	16.6	6	2.0	16.3
2 09	342.4	0.873	5 09	159.9	0.898	Apr. 5	1.2	16.6	11	2.0	16.4
2 12	337.5	0.922	5 12	155.3	0.942	10	-1.3	16.5	16	+2.0	16.4
2 15	333.1	0.959	5 15	151.0	0.973	15	1.4	16.5	21	2.0	16.4
2 18	329.0	0.982	5 18	147.0	0.993	20	1.4	16.5	26	2.0	16.5
2 21	325.0	0.998	5 21	143.1	1.000	25	-1.4	16.4	31	+1.9	16.5

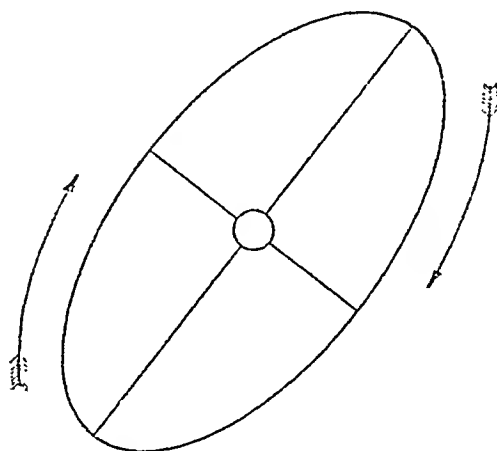
Position angle of satellite $p = p^1 + (P - P_0)$.Apparent distance of satellite $s = F \frac{a(\rho)}{\rho}$.

SATELLITE OF NEPTUNE, 1928.

543

APPARENT ORBIT OF THE SATELLITE OF NEPTUNE AT DATE OF
OPPOSITION, FEBRUARY 17, 1928,
AS SEEN IN AN INVERTING TELESCOPE.

South



North

GREENWICH MEAN TIME OF GREATEST ELONGATION.

Jan. 4 20.0 E.	Mar. 6 13.6 W.	May 7 07.0 E.	July 7 23.7 W.	Nov. 5 09.6 E.
7 18.6 W.	9 12.1 E.	10 05.6 W.	10 22.2 E.	8 08.1 W.
10 17.1 E.	12 10.7 W.	13 04.0 E.	13 20.7 W.	11 06.6 E.
13 15.6 W.	15 09.2 E.	16 02.6 W.	16 19.2 E.	14 05.1 W.
16 14.2 E.	18 07.8 W.	19 01.1 E.	19 17.7 W.	17 03.6 E.
19 12.7 W.	21 06.3 E.	21 23.6 W.	22 16.2 E.	20 02.1 W.
22 11.3 E.	24 04.9 W.	24 22.1 E.	...	23 00.6 E.
25 09.8 W.	27 03.4 E.	27 20.7 W.	Sept. 25 06.8 E.	25 23.2 W.
28 08.4 E.	30 01.9 W.	30 19.2 E.	28 05.3 W.	28 21.7 E.
31 06.9 W.	Apr. 2 00.5 E.	June 2 17.7 W.	Oct. 1 03.7 E.	Dec. 1 20.2 W.
Feb. 3 05.5 E.	4 23.1 W.	5 16.2 E.	4 02.2 W.	4 18.7 E.
6 04.0 W.	7 21.6 E.	8 14.6 W.	7 00.7 E.	7 17.2 W.
9 02.6 E.	10 20.2 W.	11 13.2 E.	9 23.2 W.	10 15.7 E.
12 01.1 W.	13 18.7 E.	14 11.7 W.	12 21.7 E.	13 14.3 W.
14 23.7 E.	16 17.2 W.	17 10.2 E.	15 20.2 W.	16 12.8 E.
17 22.2 W.	19 15.8 E.	20 08.7 W.	18 18.7 E.	19 11.3 W.
20 20.8 E.	22 14.3 W.	23 07.2 E.	21 17.2 W.	22 09.8 E.
23 19.3 W.	25 12.9 E.	26 05.7 W.	24 15.6 E.	25 08.4 W.
26 17.9 E.	28 11.4 W.	29 04.2 E.	27 14.1 W.	28 06.9 E.
29 16.4 W.	May 1 09.9 E.	July 2 02.7 W.	30 12.6 E.	31 05.4 W.
Mar. 3 15.0 E.	4 08.5 W.	5 01.2 E.	Nov. 2 11.1 W.	34 04.0 E.

In the above diagram the central circle represents the planet.

The sidereal period of the satellite of Neptune is 5^d 21^h.044.

				d	h					d	h								
July	1	♂ Sup. ♂ ☉		1	18	♂ ♂ ☉ ..	♂	0.6	N.	Oct.	1	18	♂ ♂ ☉ ..	♂	3	S.			
	3	♂ ♂ ♀	♂	0.3	S.	5	09	♂ ♂ ☉ ..	♂	5	S.	9	15	♂ ♂ ☉ ..	♂	5	S.		
	4	Earth in Aphelion.					12		♂ Stationary.			15	02	♂ ♂ ☉ ..	♂	6	S.		
	9	♂ ♂ ☉ ..	♂	4	N.														
	10	♂ Stationary.																	
	11	♂ ♂ ☉ ..	♂	2	N.	16	04	♂ ♂ ☉ ..	♂	1	S.	18	08	♂ ♂ ☉ ..	♂	3	N.		
	12	♂ ♂ ☉ ..	♂	1	N.	24		♂ Inf. ♂ ☉				26	18	♂ ♂ ☉ ..	♂	4	N.		
	13	♂ Stationary.					28	22	♂ ♂ ☉ ..	♂	0.9	N.							
	15	♂ ♂ ☉ ..	♂	6	S.														
	17	♂ ♂ ☉ ..	♂	3	S.														
	19	♂ ♂ ☉ ..	♂	5	S.	29		♂ ♂ ☉				Nov.	1		♂ Stationary.				
	21	♂ at greatest elongation 20 W					2	05	♂ ♂ ☉ ..	♂	2	S.	5	22	♂ ♂ ☉ ..	♂	5	S.	
	28	♂ ♂ ☉ ..	♂	2	N.			7	03	♂ ♂ ☉ ..	♂	2.7	S.						
	5	♂ ♂ ☉ ..	♂	4	N.														
	8	♂ ♂ ☉ ..	♂	1	N.														
Aug.	9	♂ ♂ ☉ ..	♂	0.5	S.	9		♂ at greatest elongation 19 W.					10	16	♂ ♂ ☉ ..	♂	0.5	S.	
	10	♂ ♂ ☉ ..	♂	1.0	N.	12		♂ Stationary.					12	09	☉ eclipsed.				
	15	♂ ♂ ☉ ..	♂	3	S.	14	20	♂ ♂ ☉ ..	♂	3	N.								
	15	♂ ♂ ☉ ..	♂	5	S.														
	16	♂ Sup. ♂ ☉					15	15	♂ ♂ ☉ ..	♂	0.7	N.	23	03	♂ ♂ ☉ ..	♂	4	N.	
								25	04	♂ ♂ ☉ ..	♂	1	N.	27	09	☉ eclipsed.			
	16	♂ ♂ ☉ ..	♂	4	S.	29	12	♂ ♂ ☉ ..	♂	0.9	S.								
	17	♂ Stationary																	
	18	♂ ♂ ☉ ..	♂	1.3	N.														
	19	♂ ♂ α Leonis	♂	0.4	N.														
	22	♂ ♂ ☉																	
	24	♂ ♂ ☉ ..	♂	2	N.	Dec	3	05	♂ ♂ ☉ ..	♂	5	S.	11	21	♂ ♂ ☉ ..	♂	0.6	N.	
	30	♂ Stationary.					4		♂ Stationary.					12	08	♂ ♂ ☉ ..	♂	3	N.
	2	♂ ♂ ☉ ..	♂	4	N.			13		♂ ♂ ☉									
	4	♂ ♂ ☉ ..	♂	0.7	N.														
	7	♂ ♂ ☉ ..	♂	2	S.														
	10	♂ ♂ ☉ ..	♂	1.5	S.			13		♂ Stationary.									
	12	♂ ♂ ☉ ..	♂	5	S.			15	17	♂ ♂ ☉ ..	♂	2.4	S.						
	15	♂ ♂ ☉ ..	♂	3	S.			15	21	♂ ♂ ☉ ..	♂	3	N.						
	15	♂ ♂ ☉ ..	♂	5	S.			18		♂ Sup. ♂ ☉									
	20	♂ ♂ ☉ ..	♂	2	N.			20	11	♂ ♂ ☉ ..	♂	4	N.						
	23	☉ enters Sign ♊, Equinox					21		♂ ♂ ☉										
	28	♂ ♂ ☉					22	02.1	☉ enters Sign ♋, Solstice.					22	11	♂ ♂ ☉ ..	♂	2	N.
	29	♂ at greatest elongation 26 E.												26		♂ Stationary.			
	29	♂ ♂ ☉ ..	♂	4	N.			26	08	♂ ♂ ☉ ..	♂	0.9	N.						
	29	♂ ♂ ☉ ..	♂	5	S.			30	13	♂ ♂ ☉ ..	♂	5	S.						

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE SUN.

c^h				o^h					
		I	B_s	L_s		P	B_o	L_o	
Jan.	1	-2.58	-3.01	69.80	July	4	-1.42	+3.28	148.09
	2	-0.14	3.58	3.95		9	+0.86	3.81	81.91
	11	-2.28	4.13	298.10		14	3.11	4.31	15.74
	19	4.66	4.64	232.26		19	5.33	4.78	309.58
	21	6.99	5.12	166.43		24	7.49	5.22	243.43
Feb.	26	-9.23	-5.55	100.60	Aug.	29	+9.58	+5.62	177.29
	31	11.38	5.94	34.76		3	11.59	5.98	111.16
	5	13.42	6.29	328.93		8	13.51	6.30	45.05
	10	15.34	6.58	263.10		13	15.32	6.58	338.95
	15	17.12	6.82	197.26		18	17.03	6.81	272.86
Mar.	20	-18.77	-7.01	131.42	Sept.	23	+18.61	+7.00	206.78
	25	20.27	7.15	65.57		28	20.06	7.13	140.72
	1	21.62	7.23	359.71		2	21.38	7.22	74.67
	6	22.81	7.25	293.84		7	22.56	7.25	8.63
	12	23.83	7.22	227.95		12	23.60	7.23	302.61
Apr.	16	-24.69	-7.13	162.05	Oct.	17	+24.48	+7.16	236.60
	21	25.38	6.99	96.14		22	25.21	7.04	170.60
	26	25.90	6.80	30.21		27	25.77	6.86	104.61
	31	26.24	6.55	324.25		2	26.16	6.63	38.63
	5	26.40	6.26	258.28		7	26.37	6.35	332.66
	10	-26.38	-5.93	192.29	Nov.	12	+26.40	+6.03	266.70
	15	26.18	5.55	126.28		17	26.25	5.66	200.75
	21	25.79	5.13	60.24		22	25.91	5.25	134.80
	25	25.21	4.67	351.19		27	25.37	4.79	68.86
	30	24.46	4.19	288.12		1	24.64	4.30	2.93
May	5	-23.52	-3.67	222.03		6	+23.71	+3.77	297.00
	10	22.40	3.14	155.92		11	22.58	3.22	231.08
	15	21.11	2.58	89.80		16	21.26	2.64	165.17
	20	19.65	2.00	23.66		21	19.75	2.03	99.26
	25	18.05	1.41	317.51		26	18.07	1.41	33.36
June	30	-16.31	-0.81	251.35	Dec.	1	+16.22	+0.78	327.46
	4	14.43	-0.21	185.18		6	14.22	+0.14	261.57
	9	12.44	+0.40	119.00		11	12.08	-0.50	195.69
	14	10.35	1.00	52.82		16	9.84	1.14	129.82
	19	8.18	1.59	346.64		21	7.51	1.77	63.95
	24	-5.96	+2.17	280.45		26	+5.12	-2.38	358.09
	29	-3.70	+2.74	214.27		31	+2.70	-2.98	292.23

MEAN EQUATOR, ORBIT, AND MEAN LONGITUDE.

Oh	Mean Equator.			Orbit.		Mean Longitude. (	Mean Solar Days.	Motion in Mean Longitude.
	<i>i</i>	Δ	Ω'	Γ'	Ω			
Jan. 1	23 10.0	261 08.9	-3 48.8	33 36.2	77 39.0	18 51.5	0.1	1 19.06
11	23 09.2	260 36.8	3 48.5	34 43.0	77 07.2	150 37.3	0.2	2 38.12
21	23 08.3	260 04.8	3 48.1	35 49.8	76 35.5	282 23.1	0.3	3 57.18
31	23 07.5	259 32.7	3 47.7	36 56.7	76 03.7	54 09.0	0.4	5 16.23
Feb. 10	23 06.6	259 00.5	3 47.3	38 03.5	75 31.9	185 54.8	0.5	6 35.29
							0.6	7 54.35
20	23 05.8	258 28.4	-3 46.9	39 10.4	75 00.1	317 40.7	0.7	9 13.41
Mar. 1	23 05.0	257 56.2	3 46.5	40 17.2	74 28.4	89 26.5	0.8	10 32.47
11	23 04.2	257 24.0	3 46.0	41 24.1	73 56.6	221 12.3	0.9	11 51.53
21	23 03.3	256 51.8	3 45.5	42 30.9	73 24.8	352 58.2	1.0	13 10.58
31	23 02.5	256 19.5	3 45.0	43 37.7	72 53.1	124 44.0	2.0	26 21.17
							3.0	39 31.75
Apr. 10	23 01.7	255 47.3	-3 44.5	44 44.6	72 21.3	256 29.9	4.0	52 42.33
20	23 00.8	255 15.0	3 43.9	45 51.4	71 49.5	28 15.7	5.0	65 52.92
30	23 00.0	254 42.7	3 43.4	46 58.3	71 17.7	160 01.5	6.0	79 03.50
May 10	22 59.2	254 10.4	3 42.8	48 05.1	70 46.0	291 47.4	7.0	92 14.09
20	22 58.4	253 38.1	3 42.2	49 11.9	70 14.2	63 33.2	8.0	105 24.67
							9.0	118 35.25
30	22 57.6	253 05.8	-3 41.6	50 18.8	69 42.4	195 19.0	10.0	131 45.84
June 9	22 56.8	252 33.5	3 40.9	51 25.6	69 10.6	327 04.9		
19	22 55.9	252 01.1	3 40.3	52 32.5	68 38.9	98 50.7	Hrs.	
29	22 55.1	251 28.7	3 39.6	53 39.3	68 07.1	230 36.6	1	0 32.94
July 9	22 54.3	250 56.3	3 38.9	54 46.2	67 35.3	2 22.4	2	1 05.88
							3	1 38.82
19	22 53.5	250 23.9	-3 38.1	55 53.0	67 03.6	134 08.2	4	2 11.76
29	22 52.7	249 51.4	3 37.4	56 59.8	66 31.8	265 54.1	5	2 44.70
Aug. 8	22 52.0	249 19.0	3 36.6	58 06.7	66 00.0	37 39.9	6	3 17.65
18	22 51.2	248 46.5	3 35.9	59 13.5	65 28.2	169 25.7	7	3 50.59
28	22 50.4	248 14.0	3 35.1	60 20.4	64 56.5	301 11.6	8	4 23.53
							9	4 56.47
Sept. 7	22 49.6	247 41.5	-3 34.2	61 27.2	64 24.7	72 57.4	10	5 29.41
17	22 48.8	247 08.9	3 33.4	62 34.1	63 52.9	204 43.3	11	6 02.35
27	22 48.0	246 36.4	3 32.5	63 40.9	63 21.2	336 29.1	12	6 35.29
Oct. 7	22 47.2	246 03.8	3 31.6	64 47.7	62 49.4	108 14.9	13	7 08.23
17	22 46.5	245 31.2	3 30.7	65 54.6	62 17.6	240 00.8	14	7 41.17
							15	8 14.11
27	22 45.7	244 58.6	-3 29.8	67 01.4	61 45.8	11 46.6	16	8 47.06
Nov. 6	22 44.9	244 25.9	3 28.9	68 08.3	61 14.1	143 32.5	17	9 20.00
16	22 44.1	243 53.3	3 27.9	69 15.1	60 42.3	275 18.3	18	9 52.94
26	22 43.4	243 20.6	3 26.9	70 22.0	60 10.5	47 04.1	19	10 25.88
Dec. 6	22 42.6	242 48.0	3 25.9	71 28.8	59 38.7	178 50.0	20	10 58.82
							21	11 31.76
16	22 41.9	242 15.3	-3 24.9	72 35.6	59 07.0	310 35.8	22	12 04.70
26	22 41.1	241 42.6	3 23.9	73 42.5	58 35.2	82 21.7	23	12 37.64
36	22 40.4	241 09.8	-3 22.8	74 49.3	58 03.4	214 07.5		

Daily motion of Γ' +6'.684Daily motion of Ω -3'.177

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Oh	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when observable.				
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	S	Dec.		
Jan.	1	-2.56	+5.98	0.00	-0.03	9.67	-0.54	338.25	I.		S.	
	2	1.50	5.02	0.00	0.03	21.82	0.58	340.77	I.		S.	
	3	-0.34	3.73	0.00	0.03	33.96	0.61	344.40	I.		S.	
	4	+0.87	2.21	0.00	0.03	46.09	0.65	349.05	I.		S.	
	5	2.07	+0.54	+0.01	0.03	58.22	0.68	354.56	I.		S.	0.00
	6	+3.19	-1.16	+0.01	-0.03	70.35	-0.72	0.59	I.	0.11	N.	0.56
	7	4.16	2.76	0.01	0.03	82.48	0.75	6.66	—	—	—	
	8	4.90	4.17	0.01	0.03	94.60	0.79	12.22	II.		N.	0.08
	9	5.37	5.32	0.01	0.03	106.73	0.82	16.80	II.		S.	
	10	5.51	6.14	0.01	0.03	118.86	0.85	20.17	II.		S.	
	11	+5.31	-6.62	+0.01	-0.03	130.99	-0.87	22.28	II.		S.	
	12	4.77	6.77	0.01	0.03	143.13	0.89	23.22	II.		S.	
	13	3.94	6.60	+0.01	0.03	155.27	0.91	23.13	II.		S.	
	14	2.86	6.14	0.00	0.03	167.42	0.93	22.13	II.		S.	
	15	1.60	5.42	0.00	0.03	179.58	0.95	20.32	II.		S.	
	16	+0.26	-4.47	0.00	-0.03	191.74	-0.96	17.75	II.		S.	
	17	-1.09	3.33	0.00	0.03	203.91	0.97	14.46	II.		S.	
	18	2.36	2.05	0.00	0.03	216.08	0.99	10.47	II.		S.	
	19	3.47	-0.65	0.00	0.03	228.26	1.00	5.84				
	20	4.35	+0.80	0.00	0.03	240.44	1.01	0.70				
	21	-4.95	+2.23	0.00	-0.03	252.63	-1.03	355.28				
	22	5.23	3.59	0.00	0.02	264.82	1.04	349.93				
	23	5.16	4.78	0.00	0.02	277.01	1.06	345.09				
	24	4.02	5.73	0.00	0.02	289.20	1.07	341.16				
	25	4.21	6.36	0.00	0.02	301.39	1.09	338.39				
	26	-3.40	-6.63	0.00	-0.02	313.58	-1.11	336.94	I.		S.	
	27	2.47	6.5	0.00	0.02	325.76	1.13	336.78	I.		S.	
	28	1.44	5.97	0.00	0.02	337.93	1.15	337.87	I.		S.	
	29	-0.41	5.08	0.00	0.02	350.10	1.17	340.12	I.		S.	
	30	+1.46	3.88	0.00	0.02	2.27	1.20	343.44	I.		S.	
Feb.	31	+1.35	+2.34	0.00	-0.02	14.42	-1.22	347.75	I.		S.	
	1	2.17	+0.86	0.00	0.02	26.57	1.25	352.90	I.		S.	1.22
	2	2.91	-0.76	0.00	0.02	38.71	1.27	358.65	I.		N.	0.91
	3	3.56	2.31	0.00	0.03	50.85	1.30	4.60	I.		N.	
	4	4.09	3.74	0.00	0.03	62.98	1.32	10.26	I.		N.	
	5	+4.46	-4.92	0.00	-0.03	75.12	-1.35	15.17	—		—	
	6	4.64	5.81	0.00	0.03	87.25	1.37	18.98	II.	0.13	N.	
	7	4.58	6.38	0.00	0.03	99.38	1.39	21.56	II.		S.	0.28
	8	4.26	6.61	0.00	0.03	111.52	1.41	22.94	II.		S.	
	9	3.66	6.52	0.00	0.03	123.65	1.42	23.23	II.		S.	
	10	+2.79	-6.13	0.00	-0.03	135.79	-1.43	22.55	II.		S.	
	11	1.70	5.46	0.00	0.03	147.94	1.44	21.01	II.		S.	
	12	+0.44	4.57	0.00	0.03	160.09	1.44	18.70	II.		S.	
	13	-0.02	3.49	0.00	0.03	172.25	1.45	15.66	II.		S.	
	14	2.30	2.26	-0.01	0.03	184.42	1.45	11.94	II.		S.	
	15	-3.59	-0.02	-0.01	-0.03	196.59	-1.45	7.58	II.		S.	
16	-4.70	+0.48	-0.01	-0.02	208.77	-1.45	2.66	II.		S.		

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Ob	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when observable.			
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.	
Feb.	16	-4°70	+0°48	-0°01	-0°02	208°77	-1°45	2°66	II.	S.	
	17	5°54	1°88	0°01	0°02	220°95	1°45	357°36	II.	N.	
	18	6°04	3°23	0°01	0°02	233°14	1°45	351°98			
	19	6°13	4°44	0°01	0°02	245°33	1°45	346°91			
	20	5°80	5°44	0°01	0°02	257°53	1°46	342°56			
	21	-5°08	+6°15	-0°01	-0°02	269°73	-1°46	339°30			
	22	4°02	6°50	0°01	0°02	281°93	1°46	337°34			
	23	2°73	6°44	0°01	0°02	294°13	1°46	336°74			
	24	-1°33	5°97	0°01	0°02	306°33	1°47	337°47	I.	S.	
	25	+0°05	5°10	0°01	0°02	318°52	1°48	339°45	I.	S.	
	26	+1°32	+3°92	-0°01	-0°02	330°71	-1°48	342°56	I.	S.	
	27	2°41	2°50	0°01	0°02	342°90	1°49	346°69	I.	S.	
	28	3°29	+0°94	0°01	0°02	355°07	1°50	351°68	I.	S.	
	29	3°96	-0°66	0°01	0°02	7°24	1°51	357°29	I.	N.	0°12
Mar.	1	4°44	2°19	0°01	0°02	19°41	1°52	3°15	I.	N.	
	2	+4°74	-3°58	-0°01	-0°02	31°57	-1°54	8°83	I.	N.	
	3	4°88	4°75	0°00	0°02	43°72	1°55	13°86	I.	N.	
	4	4°86	5°66	0°00	0°02	55°87	1°56	17°93	I.	N.	
	5	4°67	6°26	0°00	0°02	68°01	1°56	20°84	I.	N.	0°10
	6	4°30	6°53	0°00	0°02	80°16	1°57	22°58	—	—	
	7	+3°73	-6°49	-0°01	-0°02	92°31	-1°57	23°21	II.	N.	0°23
	8	2°95	6°13	0°01	0°02	104°45	1°57	22°84	II.	S.	
	9	1°96	5°50	0°01	0°02	116°60	1°57	21°58	II.	S.	
	10	+0°79	4°64	0°01	0°02	128°75	1°56	19°52	II.	S.	
	11	-0°52	3°58	0°01	0°02	140°91	1°56	16°72	II.	S.	
	12	-1°91	-2°37	-0°01	-0°02	153°07	-1°55	13°23	II.	S.	
	13	3°31	-1°05	0°01	0°02	165°24	1°54	9°10	II.	S.	
	14	4°63	+0°31	0°01	0°02	177°42	1°53	4°40	II.	S.	
	15	5°77	1°69	0°01	0°02	189°60	1°52	359°29	II.	N.	
	16	6°64	3°01	0°02	0°02	201°79	1°50	354°00	II.	N.	
	17	-7°14	+4°22	-0°02	-0°02	213°98	-1°49	348°86	II.	N.	
	18	7°20	5°25	0°02	0°02	226°18	1°48	344°26			
	19	6°78	6°03	0°02	0°02	238°39	1°47	340°56			
	20	5°89	6°47	0°02	0°02	250°60	1°45	338°04			
	21	4°57	6°51	0°02	0°02	262°81	1°44	336°86			
	22	-2°95	+6°13	-0°02	-0°02	275°03	-1°43	337°06			
	23	-1°17	5°32	0°02	0°02	287°24	1°42	338°60			
	24	+0°61	4°15	0°01	0°02	299°46	1°41	341°39			
	25	2°25	2°70	0°01	0°02	311°67	1°40	345°31	I.	S.	
	26	3°65	+1°09	0°01	0°02	323°88	1°40	350°21	I.	S.	
	27	+4°73	-0°56	-0°01	-0°02	336°08	-1°39	355°82	I.	S.	
	28	5°49	2°14	0°01	0°02	348°27	1°38	1°77	I.	N.	
	29	5°95	3°56	0°01	0°02	360°46	1°38	7°58	I.	N.	
	30	6°12	4°76	0°01	0°02	12°64	1°38	12°79	I.	N.	
	31	6°04	5°68	0°01	0°02	24°82	1°37	17°06	I.	N.	
Apr.	1	+5°74	-6°30	-0°01	-0°02	36°99	-1°37	20°21	I.	N.	

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Ch	The Earth's		Physical Libration		The Sun's		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when observable.				
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.		
Apr.	1	+5.72	-6.10	-0.01	-0.02	36.99	-1.37	20.21	I.		N.	
	2	5.25	6.50	0.01	0.02	49.16	1.36	22.21	I.		N.	
	3	4.51	6.57	0.01	0.02	61.33	1.35	23.10	I.		N.	
	4	3.72	6.25	0.01	0.02	73.49	1.34	23.00	—		—	
	5	2.73	5.64	0.01	0.02	85.65	1.33	21.99	II.	0.00	N.	
	6	1.54	-4.71	-0.01	-0.02	97.82	-1.32	20.16	II.		S.	0.12
	7	+0.30	3.73	0.01	0.02	109.98	1.30	17.58	II.		S.	
	8	-1.07	2.52	0.01	0.02	122.15	1.28	14.30	II.		S.	
	9	2.43	-1.20	0.01	0.02	134.32	1.26	10.36	II.		S.	
	10	3.88	+0.17	0.01	0.02	146.50	1.24	5.84	II.		S.	
	11	-5.19	+1.55	-0.01	-0.02	158.68	-1.22	0.88	II.		S.	0.70
	12	6.35	2.84	0.02	0.02	170.85	1.19	355.69	II.		N.	
	13	7.22	4.10	0.02	0.02	183.06	1.17	350.56	II.		N.	
	14	7.75	5.16	0.02	0.02	195.26	1.14	345.84	II.		N.	
	15	7.87	5.98	0.02	0.02	207.47	1.12	341.88	II.		N.	
	16	-7.51	+6.51	-0.02	-0.02	219.68	-1.10	338.94	II.		N.	
	17	6.66	6.67	0.02	0.02	231.90	1.08	337.23				
	18	5.35	6.22	0.02	0.02	244.13	1.05	336.84				
	19	3.64	5.74	0.02	0.02	256.36	1.03	337.78				
	20	-1.75	4.65	0.01	0.02	268.59	1.01	340.03				
	21	+0.27	3.22	-0.01	-0.02	280.82	-0.98	343.54				
	22	2.10	+1.57	0.01	0.02	293.05	0.96	348.19				
	23	3.84	-0.17	0.01	0.02	305.28	0.94	353.74	I.		S.	
	24	5.20	1.87	0.01	0.02	317.51	0.92	359.83	I.		N.	
	25	6.26	3.49	0.01	0.02	329.73	0.91	5.93	I.		N.	
	26	-6.86	-2.70	-0.01	-0.02	341.94	-0.89	11.49	I.		N.	
	27	7.00	5.70	0.01	0.02	354.15	0.87	16.11	J.		N.	
	28	6.02	6.17	0.01	0.02	6.35	0.86	19.56	I.		N.	
	29	6.50	6.11	0.01	0.02	18.55	0.84	21.82	I.		N.	
	30	5.11	6.11	0.01	0.02	30.74	0.82	22.96	I.		N.	
May	1	+5.02	-6.43	-0.01	-0.02	42.93	-0.80	23.07	I.		N.	
	2	3.96	5.85	0.01	0.02	55.11	0.78	22.28	I.		N.	
	3	2.77	5.02	0.01	0.02	67.29	0.76	20.67	I.		N.	
	4	1.48	3.98	0.01	0.02	79.47	0.74	18.30	—		—	
	5	+0.11	2.77	0.01	0.02	91.65	0.72	15.20	II.	0.05	N.	0.06
	6	-1.20	-1.43	-0.01	-0.02	103.84	-0.69	11.43	II.		S.	0.97
	7	2.68	-0.05	0.01	0.02	116.02	0.66	7.06	II.		S.	
	8	4.02	-1.35	0.01	0.02	128.20	0.63	2.19	II.		S.	
	9	5.25	2.71	0.01	0.02	140.39	0.60	357.05	II.		S.	0.04
	10	6.30	3.96	0.01	0.02	152.58	0.58	351.92	II.		N.	
	11	-7.12	+5.05	-0.01	-0.02	164.78	-0.55	347.12	II.		N.	
	12	-7.04	5.93	0.01	0.01	176.99	0.52	343.00	II.		N.	
	13	7.79	6.52	0.01	0.01	189.20	0.49	339.80	II.		N.	
	14	7.53	6.78	0.01	0.01	201.42	0.46	337.72	II.		N.	
	15	6.83	6.67	0.01	0.01	213.64	0.43	336.86	II.		N.	
	16	-5.69	+6.14	-0.01	-0.01	225.87	-0.40	337.25				
	17	-4.18	+5.20	-0.01	-0.01	238.11	-0.37	338.91				

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Ch	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when observable.			
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.	
May	17	-4°18	+5°20	-0°01	-0°01	238°11	-0°37	338°91			
	18	2°38	3°89	0°01	0°01	250°35	0°34	341°82			
	19	-0°42	2°29	0°01	0°01	262°60	0°32	345°96			
	20	+1°55	+0°53	0°01	0°01	274°85	0°29	351°18			
	21	3°38	-1°26	-0°01	0°01	287°09	0°26	357°21			
	22	+4°95	-2°93	0°00	-0°01	299°34	-0°24	3°54	I.		N.
	23	6°16	4°38	0°00	0°01	311°58	0°21	9°55	I.		N.
	24	6°96	5°52	0°00	0°01	323°81	0°19	14°69	I.		N.
	25	7°33	6°31	0°00	0°02	336°04	0°16	18°63	I.		N.
	26	7°30	6°75	0°00	0°02	348°27	0°14	21°28	I.		N.
	27	+6°90	-6°83	0°00	-0°02	0°48	-0°12	22°73	I.		N.
	28	6°18	6°59	0°00	0°02	12°70	0°09	23°10	I.		N.
	29	5°20	6°06	0°00	0°02	24°90	0°07	22°52	I.		N.
	30	4°04	5°27	0°00	0°02	37°10	0°05	21°11	I.		N.
	31	2°74	4°26	0°00	0°02	49°30	-0°02	18°94	I.		N.
June	1	+1°36	-3°07	0°00	-0°01	61°50	0°00	16°04	I.		N.
	2	-0°04	1°76	-0°01	0°01	73°69	+0°03	12°44	I.		N.
	3	1°42	-0°36	0°01	0°01	85°88	0°06	8°21	—		—
	4	2°73	+1°06	0°01	0°01	98°07	0°09	3°44	II.		S.
	5	3°95	2°44	0°01	0°01	110°27	0°12	358°33	II.		S.
	6	-4°98	+3°73	-0°01	-0°01	122°46	+0°14	353°15	II.		S.
	7	5°84	4°86	0°01	0°01	134°66	0°17	348°24	II.		N.
	8	6°48	5°78	0°01	0°01	146°86	0°20	343°94	II.		N.
	9	6°85	6°43	0°01	0°01	159°06	0°23	340°54	II.		N.
	10	6°93	6°77	0°01	0°01	171°27	0°26	338°20	II.		N.
	11	-6°69	+6°75	-0°01	-0°01	183°49	+0°28	337°02	II.		N.
	12	6°11	6°35	0°01	0°01	195°71	0°31	337°02	II.		N.
	13	5°19	5°57	0°01	0°01	207°94	0°34	338°21	II.		N.
	14	3°96	4°42	-0°01	0°01	220°18	0°37	340°57	II.		N.
	15	2°46	2°95	0°00	0°01	232°42	0°39	344°12			
	16	-0°78	+1°27	0°00	-0°01	244°67	+0°42	348°80			
	17	+0°98	-0°50	0°00	0°01	256°93	0°45	354°46			
	18	2°69	2°24	0°00	0°01	269°18	0°48	0°72			
	19	4°24	3°80	0°00	0°01	281°43	0°50	7°01			
	20	5°51	5°09	0°00	0°01	293°68	0°53	12°68			
	21	+6°41	-6°04	0°00	-0°01	305°93	+0°55	17°23	I.		N.
	22	6°90	6°60	0°00	0°01	318°18	0°58	20°44	I.		N.
	23	6°96	6°80	0°00	0°01	330°41	0°60	22°33	I.		N.
	24	6°62	6°65	0°00	0°01	342°65	0°62	23°05	I.		N.
	25	5°92	6°18	0°00	0°01	354°88	0°65	22°75	I.		N.
	26	+4°92	-5°45	0°00	-0°01	7°10	+0°67	21°56	I.		N.
	27	3°71	4°49	0°00	0°01	19°32	0°69	19°59	I.		N.
	28	2°37	3°34	0°00	0°01	31°53	0°72	16°89	I.		N.
	29	+0°97	2°06	0°00	0°01	43°73	0°74	13°49	I.		N.
	30	-0°42	-0°69	0°00	0°01	55°93	0°76	9°43	I.		N.
July	1	-1°73	+0°72	0°00	-0°01	68°13	+0°79	4°79	I.		S.

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Oh	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when observable.				
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.		
July	1	-1°73	+0°72	0°00	-0°01	68°13	+0°79	4°79	I.		S.	0°59
	2	-2°91	2°11	0°00	0°01	80°33	0°81	359°73	I.	0°02	S.	
	3	-3°51	3°42	0°00	0°01	92°52	0°83	354°50	—		—	
	4	-4°72	4°58	0°00	0°01	104°72	0°85	349°45	II.		S.	0°91
	5	-5°27	5°55	0°00	0°01	116°91	0°88	344°94	II.		N.	0°10
	6	-5°60	+6°25	0°00	-0°01	129°11	+0°90	341°28	II.		N.	
	7	-5°70	6°64	0°00	0°01	141°31	0°92	338°68	II.		N.	
	8	-5°56	6°69	0°00	0°01	153°51	0°94	337°24	II.		N.	
	9	-5°20	6°36	0°00	0°01	165°72	0°96	336°96	II.		N.	
	10	-4°62	5°67	0°00	0°01	177°94	0°98	337°82	II.		N.	
	11	-3°83	+4°64	0°00	-0°01	190°16	+1°00	339°80	II.		N.	
	12	-2°84	3°31	0°00	0°01	202°39	1°02	342°89	II.		N.	
	13	-1°67	1°75	0°00	0°01	214°63	1°04	347°07	II.		N.	
	14	-0°36	+0°07	0°00	0°01	226°87	1°06	352°24				
	15	+1°03	-1°63	+0°01	0°01	239°12	1°08	358°18				
	16	+2°43	-3°22	+0°01	-0°01	251°37	+1°10	4°44				
	17	3°73	4°59	0°01	0°01	263°63	1°12	10°39				
	18	4°84	5°64	0°01	0°01	275°88	1°14	15°45				
	19	5°66	6°34	0°01	0°01	288°13	1°16	19°25				
	20	6°12	6°65	0°01	0°01	300°38	1°18	21°70	I.		N.	
	21	-6°19	-6°60	+0°01	-0°01	312°63	+1°20	22°87	I.		N.	
	22	-5°86	6°21	0°01	0°01	324°87	1°22	22°92	I.		N.	
	23	-5°17	5°53	0°01	0°01	337°10	1°23	22°01	I.		N.	
	24	-4°18	4°62	0°01	0°01	349°33	1°25	20°27	I.		N.	
	25	-2°46	3°52	0°01	0°01	1°56	1°27	17°79	I.		N.	
	26	-1°60	-2°28	+0°01	-0°01	13°77	+1°28	14°60	I.		N.	
	27	-0°20	-0°94	0°01	0°01	25°98	1°30	10°74	I.		N.	
	28	-1°16	-0°44	0°01	0°01	38°19	1°31	6°28	I.		N.	0°10
	29	-2°37	1°81	+0°01	0°01	50°39	1°33	1°34	I.		S.	
	30	-3°12	3°12	0°00	0°01	62°59	1°34	356°12	I.		S.	
Aug.	31	-4°21	+4°30	0°00	-0°01	74°78	+1°35	350°96	I.		S.	
	1	-4°72	5°29	0°00	0°01	86°97	1°36	346°21	—		—	
	2	-4°45	6°04	0°00	-0°01	99°16	1°37	342°24	II.		S.	
	3	-4°90	6°24	0°00	0°00	111°35	1°38	339°30	II.		N.	0°07
	4	-4°61	6°57	0°00	0°00	123°64	1°39	337°53	II.		N.	
	5	-4°13	+6°30	0°00	0°00	135°73	+1°40	336°96	II.		N.	
	6	-3°49	5°66	0°00	0°00	147°93	1°41	337°56	II.		N.	
	7	-2°74	4°60	-0°01	0°00	160°13	1°41	339°28	II.		N.	
	8	-1°91	3°41	0°01	0°00	172°34	1°42	342°08	II.		N.	
	9	-1°02	1°92	0°01	0°00	184°55	1°43	345°92	II.		N.	
	10	-0°08	+0°32	+0°01	0°00	196°77	+1°43	350°73	II.		N.	
	11	-0°91	-1°32	0°01	0°00	209°00	1°44	356°34	II.		N.	
	12	-1°02	2°87	0°01	-0°01	221°24	1°45	2°38				
	13	-2°92	4°23	0°02	0°01	233°48	1°46	8°35				
	14	-3°84	5°33	0°02	0°01	245°72	1°47	13°68				
	15	+4°61	-6°10	+0°02	-0°01	257°96	+1°48	17°92				
16	+5°16	-6°50	+0°02	-0°01	270°21	+1°49	20°87					

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Oh	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when observable.			
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.	"
Aug.	16	+5°16	—6°50	+0°02	—0°01	270°21	+1°49	20°87			
	17	5°42	6°53	0°02	0°01	282°46	1°50	22°51			
	18	5°35	6°21	0°02	0°01	294°70	1°51	22°97			
	19	4°94	5°59	0°02	0°01	306°94	1°52	22°41	I.	N.	
	20	4°20	4°72	0°02	—0°01	319°17	1°53	20°95	I.	N.	
	21	+3°17	—3°64	+0°02	0°00	331°40	+1°53	18°70	I.	N.	
	22	1°93	2°42	0°02	0°00	343°63	1°54	15°73	I.	N.	
	23	+0°56	—1°11	0°01	0°00	355°85	1°54	12°09	I.	N.	
	24	—0°84	+0°25	0°01	0°00	8°06	1°55	7°83	I.	N.	
	25	2°18	1°60	0°01	0°00	20°26	1°55	3°06	I.	S.	0°16
	26	—3°36	+2°90	+0°01	0°00	32°46	+1°55	357°94	I.	S.	
	27	4°31	4°08	0°01	0°00	44°65	1°55	352°74	I.	S.	
	28	4°95	5°10	0°01	0°00	56°84	1°55	347°82	I.	S.	
	29	5°23	5°89	0°01	0°00	69°02	1°55	343°54	I.	S.	
	30	5°16	6°39	0°01	0°00	81°20	1°55	340°21	—	—	
Sept.	31	—4°74	+6°54	+0°01	0°00	93°38	+1°54	338°02	II.	0°00	S.
	1	4°04	6°32	0°01	0°00	105°56	1°54	337°05	II.		0°02
	2	3°13	5°71	0°01	0°00	117°74	1°53	337°31	II.		N.
	3	2°10	4°74	0°01	0°00	129°92	1°52	338°76	II.		N.
	4	—1°03	3°48	0°01	0°00	142°10	1°51	341°32	II.		N.
	5	+0°02	+2°00	+0°01	0°00	154°29	+1°50	344°96	II.		N.
	6	1°01	+0°39	0°01	0°00	166°48	1°50	349°57	II.		N.
	7	1°92	—1°23	0°02	0°00	178°68	1°49	354°99	II.		N.
	8	2°75	2°76	0°02	0°00	190°89	1°48	0°90	II.		S.
	9	3°49	4°12	0°02	0°00	203°11	1°48	6°83	II.		S.
	10	+4°13	—5°23	+0°02	0°00	215°33	+1°47	12°26			
	11	4°65	6°02	0°02	0°00	227°55	1°47	16°75			
	12	5°02	6°46	0°02	0°00	239°78	1°46	20°03			
	13	5°19	6°55	0°02	0°00	252°01	1°46	22°06			
	14	5°12	6°29	0°02	0°00	264°24	1°46	22°90			
	15	+4°79	—5°71	+0°02	0°00	276°47	+1°46	22°67			
	16	4°18	4°86	0°02	0°00	288°70	1°45	21°52			
	17	3°31	3°80	0°02	0°00	300°93	1°45	19°54			
	18	2°20	2°58	0°02	0°00	313°16	1°44	16°80	I.	N.	
	19	+0°90	—1°27	0°02	0°00	325°38	1°44	13°38	I.	N.	
	20	—0°49	+0°09	+0°02	0°00	337°59	+1°43	9°32	I.	N.	
	21	1°91	1°45	0°02	0°00	349°80	1°42	4°72	I.	N.	
	22	3°26	2°75	0°01	0°00	2°00	1°42	359°73	I.	S.	
	23	4°45	3°95	0°01	0°00	14°19	1°41	354°59	I.	S.	
	24	5°38	4°99	0°01	0°00	26°38	1°39	349°59	I.	S.	
	25	—5°97	+5°82	+0°01	0°00	38°56	+1°38	345°10	I.	S.	
	26	6°16	6°38	0°01	0°00	50°74	1°37	341°41	I.	S.	
	27	5°92	6°62	0°01	0°00	62°91	1°35	338°77	I.	S.	
	28	5°28	6°48	0°01	0°00	75°07	1°33	337°32	I.	0°25	S.
	29	4°27	5°95	0°01	0°00	87°23	1°31	337°11	—	—	
	30	—2°98	+5°03	+0°01	0°00	99°39	+1°29	338°13	II.		0°44
Oct.	1	—1°54	+3°77	+0°01	0°00	111°55	+1°27	340°36	II.		N.

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

O ^h	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when observable.			
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.	
Oct.	1	-1°54	+3°77	+0°01	0°00	111°55	+1°27	340°36	II.	N.	0°16
	2	-0°06	2°26	0°01	0°00	123°72	1°24	343°74	II.	N.	
	3	+1°36	+0°60	0°02	0°00	135°88	1°22	348°20	II.	N.	
	4	2°64	-1°09	0°02	0°00	148°05	1°20	353°55	II.	N.	
	5	3°73	2°69	0°02	0°00	160°23	1°17	359°48	II.	N.	
	6	+4°61	-4°10	+0°02	0°00	172°41	+1°15	5°51	II.	S.	
	7	5°26	5°24	0°02	0°00	184°60	1°13	11°10	II.	S.	
	8	5°70	6°07	0°02	0°00	196°80	1°11	15°79	II.	S.	
	9	5°93	6°55	0°02	0°00	209°00	1°10	19°32	II.	S.	
	10	5°94	6°67	0°02	0°00	221°21	1°08	21°62			
	11	+5°73	-6°45	+0°02	0°00	233°42	+1°06	22°74			
	12	5°30	5°91	0°02	0°00	245°63	1°05	22°81			
	13	4°66	5°09	0°02	0°00	257°85	1°04	21°93			
	14	3°79	4°05	0°02	0°00	270°07	1°02	20°20			
	15	2°73	2°84	0°02	0°00	282°28	1°01	17°71			
	16	+1°50	-1°51	+0°02	0°00	294°49	+0°99	14°50			
	17	+0°14	-0°12	0°02	0°00	306°70	0°97	10°63			
	18	-1°29	+1°26	0°02	0°00	318°91	0°96	6°20	I.	N.	
	19	2°72	2°59	0°01	0°00	331°11	0°94	1°33	I.	N.	
	20	4°08	3°82	0°01	0°00	343°30	0°92	356°25	I.	S.	
	21	-5°28	+4°90	+0°01	0°00	355°49	+0°91	351°25	I.	S.	
	22	6°24	5°77	0°01	0°00	7°68	0°89	346°63	I.	S.	
	23	6°87	6°40	0°01	0°00	19°85	0°86	342°70	I.	S.	
	24	7°11	6°73	0°01	0°00	32°02	0°84	339°71	I.	S.	
	25	6°91	6°71	0°01	0°00	44°18	0°82	337°81	I.	S.	
	26	-6°35	+6°31	+0°01	0°00	56°34	+0°79	337°08	I.	S.	
	27	5°15	5°51	0°01	0°00	68°49	0°76	337°56	I.	S.	
	28	3°60	4°34	0°01	0°00	80°64	0°72	339°27	II.	S.	
	29	1°08	2°85	0°01	0°00	92°78	0°69	342°20	—	—	
	30	-0°15	+1°15	0°01	0°00	104°92	0°66	346°32	II.	N.	
Nov.	31	+1°66	-0°63	+0°01	0°00	117°07	+0°62	351°52	II.	N.	
	1	3°33	2°35	0°01	0°00	129°22	0°59	357°50	II.	N.	
	2	4°76	3°89	0°02	0°00	141°37	0°55	3°76	II.	S.	
	3	5°88	5°15	0°02	0°00	153°53	0°52	9°68	II.	S.	
	4	6°66	6°07	0°02	0°00	165°69	0°49	14°73	II.	S.	
	5	+7°09	-6°62	+0°02	0°00	177°86	+0°46	18°59	II.	S.	
	6	7°10	6°80	0°02	0°00	190°04	0°44	21°18	II.	S.	
	7	6°99	6°63	0°02	0°00	202°22	0°41	22°55	II.	S.	
	8	6°50	6°14	0°02	0°00	214°41	0°39	22°85			
	9	5°77	5°36	0°02	0°00	226°60	0°36	22°20			
	10	+4°83	-4°35	+0°02	0°00	238°80	+0°34	20°71			
	11	4°72	3°15	0°02	0°00	251°00	0°32	18°44			
	12	2°48	1°82	0°01	0°00	263°20	0°30	15°44			
	13	+1°13	-0°43	0°01	+0°01	275°40	0°28	11°76			
	14	-0°28	+0°98	0°01	0°01	287°60	0°25	7°47			
	15	-1°71	+2°34	+0°01	+0°01	299°80	+0°23	2°71			
16	-3°11	+3°61	+0°01	+0°01	311°99	+0°21	357°67	I.	S.		

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Oh	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when observable.				
	Long.	Lat.	Long.	Lat.	Long.	Lat.		R.A.	S	Dec.		
IV.	16	—3°11	+3°61	+0°01	+0°01	311°99	+0°21	357°67	I.		S.	
	17	4°43	4°73	0°01	0°01	324°18	0°19	352°64	I.		S.	
	18	5°60	5°65	+0°01	0°01	336°36	0°17	347°91	I.		S.	
	19	6°55	6°34	0°00	0°01	348°54	0°14	343°85	I.		S.	
	20	7°23	6°75	0°00	0°01	0°72	0°12	340°62	I.		S.	
	21	—7°57	+6°83	0°00	+0°01	12°88	+0°09	338°40	I.		S.	
	22	7°51	6°57	0°00	0°01	25°04	0°06	337°26	I.		S.	
	23	7°02	5°93	0°00	0°01	37°19	+0°03	337°24	I.		S.	
	24	6°09	4°92	0°00	0°01	49°34	0°00	338°38	I.		S.	
	25	4°74	3°57	0°00	0°01	61°47	—0°03	340°70	I.		S.	
	26	—3°04	+1°95	+0°01	+0°01	73°61	—0°07	344°24	I.		S.	
	27	—1°11	+0°16	0°01	0°01	85°74	0°11	348°97	—		—	
	28	+0°92	—1°65	0°01	0°01	97°87	0°15	354°73	II.		N.	
	29	2°89	3°33	0°01	0°01	110°00	0°18	1°11	II.		N.	
	30	4°66	4°75	0°01	0°01	122°13	0°22	7°46	II.		S.	
	C.	1	+6°11	—5°84	+0°01	+0°01	134°27	—0°26	13°08	II.		S.
		2	7°15	6°52	0°01	0°01	146°41	0°29	17°50	II.		S.
		3	7°74	6°81	0°01	0°01	158°56	0°32	20°54	II.		S.
		4	7°90	6°72	0°01	0°01	170°72	0°35	22°27	II.		S.
		5	7°65	6°28	0°01	0°01	182°88	0°38	22°84	II.		S.
		6	+7°04	—5°55	+0°01	+0°01	195°05	—0°41	22°41	II.		S.
		7	6°14	4°58	0°01	0°01	207°22	0°43	21°11	II.		S.
		8	5°01	3°43	0°01	0°01	219°40	0°45	19°04			
		9	3°73	2°13	0°01	0°01	231°58	0°48	16°24			
		10	2°35	—0°75	+0°01	0°01	243°77	0°50	12°75			
		11	+0°93	+0°65	0°00	+0°01	255°96	—0°52	8°63			
		12	—0°49	2°02	0°00	0°01	268°15	0°54	3°98			
		13	1°87	3°31	0°00	0°01	280°34	0°56	358°98			
		14	3°16	4°47	0°00	0°01	292°53	0°58	353°91			
		15	4°34	5°43	0°00	0°01	304°72	0°60	349°09			
16		—5°37	+6°16	0°00	+0°01	316°90	—0°62	344°84	I.		S.	
17		6°22	6°62	0°00	0°01	329°08	0°64	341°40	I.		S.	
18		6°85	6°78	0°00	0°01	341°25	0°66	338°94	I.		S.	
19		7°21	6°61	0°00	0°01	353°42	0°68	337°52	I.		S.	
20		7°26	6°09	0°00	0°01	5°58	0°71	337°16	I.		S.	
21		—6°97	+5°23	0°00	+0°01	17°73	—0°73	337°87	I.		S.	
22		6°31	4°05	0°00	0°01	29°88	0°76	339°66	I.		S.	
23		5°25	2°59	0°00	0°01	42°02	0°79	342°58	I.		S.	
24		3°84	+0°92	0°00	0°01	54°15	0°82	346°66	I.		S.	
25		2°11	—0°84	0°00	0°01	66°28	0°85	351°87	I.		N.	
26		—0°19	—2°57	0°00	+0°01	78°41	—0°88	357°98	—		—	
27		+1°81	4°11	0°00	0°01	90°53	0°91	4°46	II.	0°10	N.	
28		3°71	5°35	0°00	0°01	102°66	0°94	10°60	II.		N.	
29		5°35	6°21	0°00	0°01	114°78	0°97	15°73	II.		S.	
30		6°61	6°65	0°00	0°01	126°91	1°00	19°46	II.		S.	
31		+7°41	—6°67	0°00	+0°01	139°05	—1°03	21°76	II.		S.	
32		+7°71	—6°32	0°00	+0°01	151°19	—1°05	22°73	II.		S.	

ILLUMINATED DISC OF MERCURY.

α''	k	i	C	L	Stellar Mag.	α''	k	i	θ	L	Stellar Mag.
Jan. 1	0.992	10	162	24.7	-0.7	July 4	0.027	161	147	4.5	+2.7
6	0.998	5	131	25.7	0.8	9	0.090	145	162	13.5	2.0
11	0.998	5	50	27.9	0.9	14	0.187	129	169	25.2	1.3
16	0.990	11	13	31.8	0.9	19	0.314	112	175	37.6	0.7
21	0.968	20	359	37.8	1.0	24	0.468	94	180	50.2	+0.1
26	0.923	32	351	46.5	-1.0	29	0.640	74	186	61.7	-0.5
31	0.858	47	345	57.6	0.9	Aug. 3	0.807	52	193	68.5	1.0
Feb. 5	0.692	67	340	67.4	0.7	8	0.930	31	203	66.8	1.4
10	0.481	92	335	66.1	-0.2	13	0.989	12	224	58.2	1.6
15	0.246	121	330	44.8	+0.6	18	0.996	7	337	48.2	1.5
20	0.067	150	318	14.3	+1.8	23	0.974	19	9	40.0	-1.1
25	0.008	169	237	1.8	2.8	28	0.940	28	17	34.3	0.7
Mar. 1	0.067	150	176	12.4	2.0	Sept. 2	0.902	36	21	30.7	0.4
6	0.184	129	167	26.1	1.3	7	0.862	44	23	28.7	-0.2
11	0.306	113	163	32.8	0.9	12	0.819	50	25	28.0	0.0
16	0.413	100	160	34.2	+0.7	17	0.772	57	26	28.4	+0.1
21	0.502	90	157	33.4	0.5	22	0.717	64	26	29.9	0.2
26	0.577	81	155	32.3	0.4	27	0.651	72	26	32.4	0.2
31	0.643	73	153	31.7	0.3	Oct. 2	0.566	82	26	35.6	0.3
Apr. 5	0.703	66	151	31.9	+0.1	7	0.457	95	27	38.4	0.5
10	0.762	58	150	33.3	-0.1	12	0.316	112	27	37.4	+0.7
15	0.821	50	150	36.2	0.3	17	0.153	134	30	25.8	1.3
20	0.882	40	149	41.1	0.7	22	0.021	163	38	4.7	2.4
25	0.942	28	150	48.2	1.1	27	0.026	161	200	6.2	2.3
30	0.988	13	150	57.3	1.5	Nov. 1	0.202	127	207	39.4	+0.8
May 5	0.997	6	339	65.6	-1.8	6	0.445	96	208	60.7	0.0
10	0.948	26	359	68.5	1.5	11	0.650	72	207	59.4	-0.4
15	0.841	47	343	63.9	1.1	16	0.791	54	206	49.8	0.6
20	0.709	65	347	55.4	-0.5	21	0.878	41	203	40.5	0.6
25	0.578	81	352	46.9	0.0	26	0.931	30	200	33.7	0.6
30	0.459	95	356	39.8	+0.4	Dec. 1	0.963	22	195	29.1	-0.6
June 4	0.352	107	359	33.8	0.8	6	0.983	15	188	26.2	0.7
9	0.255	119	3	27.7	1.2	11	0.994	9	177	24.7	0.7
14	0.165	132	7	20.8	1.6	16	0.999	4	143	24.4	0.8
19	0.087	146	13	12.6	2.0	21	0.998	5	49	25.1	0.8
24	0.030	160	26	4.8	+2.6	26	0.992	10	20	27.1	-0.8
29	0.007	170	82	1.2	+3.1	31	0.977	18	9	30.5	-0.8

ILLUMINATED DISC OF VENUS.

ob	k	i	θ	L	Stellar Mag.	ob	k	i	θ	L	Stellar Mag.
Jan. 1	0.683	68.6	196.0	96.6	-3.7	July 4	1.000	1.3	320.5	45.4	-3.5
6	0.700	66.4	193.8	92.3	3.7	9	0.999	3.1	346.0	45.5	3.5
11	0.717	64.2	191.5	88.3	3.6	14	0.998	5.0	354.5	45.7	3.5
16	0.734	62.1	189.0	84.6	3.6	19	0.996	7.0	359.7	45.9	3.4
21	0.749	60.1	186.3	81.2	3.6	24	0.994	8.9	3.6	46.1	3.4
26	0.764	58.1	183.6	78.1	-3.6	29	0.991	10.9	6.8	46.3	-3.4
31	0.779	56.1	180.7	75.2	3.5	Aug. 3	0.987	12.8	9.6	46.6	3.4
Feb. 5	0.793	54.2	177.8	72.4	3.5	8	0.983	14.8	12.0	47.0	3.4
10	0.806	52.3	174.9	69.9	3.5	13	0.979	16.7	14.0	47.4	3.4
15	0.819	50.4	172.1	67.6	3.4	18	0.974	18.6	15.8	47.8	3.4
20	0.831	48.6	169.4	65.5	-3.4	23	0.968	20.5	17.3	48.3	-3.4
25	0.843	46.8	166.8	63.5	3.4	28	0.962	22.4	18.5	48.8	3.4
Mar. 1	0.854	45.0	164.3	61.7	3.4	Sept. 2	0.956	24.3	19.4	49.4	3.3
6	0.865	43.2	162.0	60.0	3.4	7	0.949	26.2	20.1	50.0	3.3
11	0.875	41.4	160.0	58.4	3.4	12	0.941	28.0	20.5	50.7	3.3
16	0.885	39.6	158.2	56.9	-3.4	17	0.934	29.9	20.6	51.5	-3.3
21	0.895	37.9	156.6	55.6	3.3	22	0.925	31.7	20.5	52.3	3.3
26	0.904	36.1	155.2	54.4	3.3	27	0.917	33.5	20.1	53.2	3.3
31	0.913	34.3	154.1	53.2	3.3	Oct. 2	0.908	35.3	19.4	54.2	3.3
Apr. 5	0.921	32.6	153.3	52.2	3.3	7	0.899	37.1	18.5	55.2	3.3
10	0.929	30.8	152.8	51.3	-3.3	12	0.889	38.9	17.4	56.4	-3.3
15	0.937	29.0	152.5	50.4	3.3	17	0.879	40.7	16.0	57.7	3.4
20	0.944	27.3	152.5	49.6	3.3	22	0.869	42.4	14.3	59.0	3.4
25	0.951	25.5	152.8	48.9	3.3	27	0.858	44.2	12.4	60.5	3.4
30	0.958	23.7	153.4	48.3	3.3	Nov. 1	0.847	46.0	10.4	62.1	3.4
May 5	0.964	21.8	154.2	47.8	-3.3	6	0.836	47.8	8.1	63.9	-3.4
10	0.970	20.0	155.4	47.3	3.3	11	0.824	49.6	5.7	65.8	3.4
15	0.975	18.2	156.8	46.8	3.3	16	0.812	51.4	3.2	67.9	3.4
20	0.980	16.3	158.6	46.5	3.4	21	0.800	53.2	0.6	70.1	3.5
25	0.984	14.4	160.7	46.2	3.4	26	0.787	55.0	358.0	72.5	3.5
30	0.988	12.6	163.2	45.9	-3.4	Dec. 1	0.773	56.9	355.5	75.2	-3.5
June 4	0.991	10.7	166.0	45.7	3.4	6	0.759	58.8	353.0	78.0	3.6
9	0.994	8.7	169.3	45.5	3.4	11	0.744	60.7	350.6	81.1	3.6
14	0.996	6.8	173.3	45.4	3.4	16	0.729	62.7	348.4	84.5	3.6
19	0.998	4.9	178.6	45.4	3.5	21	0.714	64.7	346.3	88.2	3.6
24	0.999	3.0	187.4	45.4	-3.5	26	0.697	66.8	344.4	92.2	-3.7
29	1.000	1.2	215.1	45.4	-3.5	31	0.680	68.9	342.7	96.5	-3.7

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

ϕ^h	Helio- Time.	Stellar Magni- tude.	P	$i \oplus + 180^\circ$	D_\oplus	$A_\odot - A_\oplus$	D_\odot	\odot_\odot	
July	1	12.07	+0.8	324.06	127.56	-18.40	-44.71	-23.82	263.46
	3	11.90	0.8	323.88	129.00	18.01	44.78	23.87	264.72
	5	11.92	0.8	323.72	130.43	17.61	44.83	23.92	265.98
	7	11.82	0.8	323.59	131.85	17.20	44.88	23.95	267.23
	9	11.74	0.8	323.48	133.25	16.78	44.91	23.97	268.49
	11	11.66	+0.8	323.40	134.65	-16.36	-44.93	-23.98	269.74
	13	11.57	0.8	323.34	136.03	15.92	44.94	23.98	270.99
	15	11.49	0.8	323.31	137.40	15.48	44.95	23.96	272.24
	17	11.40	0.8	323.29	138.75	15.04	44.94	23.93	273.49
	19	11.32	0.7	323.30	140.10	14.59	44.92	23.89	274.73
	21	11.23	+0.7	323.34	141.43	-14.13	-44.89	-23.84	275.98
	23	11.15	0.7	323.39	142.75	13.67	44.85	23.78	277.22
	25	11.06	0.7	323.47	144.05	13.21	44.81	23.71	278.46
	27	10.97	0.7	323.56	145.35	12.74	44.76	23.62	279.69
	29	10.89	0.7	323.68	146.63	12.27	44.70	23.52	280.93
Aug.	31	10.80	+0.7	323.82	147.89	-11.79	-44.63	-23.41	282.16
	2	10.71	0.6	323.97	149.15	11.32	44.55	23.29	283.39
	4	10.62	0.6	324.15	150.39	10.84	44.47	23.16	284.61
	6	10.53	0.6	324.34	151.62	10.36	44.38	23.02	285.83
	8	10.44	0.6	324.55	152.84	9.88	44.28	22.87	287.05
	10	10.35	+0.6	324.78	154.05	-9.40	-44.18	-22.70	288.27
	12	10.26	0.6	325.03	155.24	8.92	44.07	22.53	289.49
	14	10.17	0.6	325.29	156.43	8.44	43.96	22.35	290.70
	16	10.08	0.5	325.56	157.59	7.96	43.84	22.15	291.91
	18	9.98	0.5	325.85	158.75	7.48	43.71	21.95	293.11
	20	9.89	+0.5	326.15	159.89	-7.01	-43.58	-21.74	294.31
	22	9.79	0.5	326.47	161.02	6.54	43.44	21.52	295.51
	24	9.70	0.5	326.80	162.14	6.07	43.30	21.29	296.71
	26	9.60	0.5	327.14	163.24	5.60	43.15	21.05	297.90
	28	9.51	0.4	327.48	164.33	5.14	43.00	20.80	299.09
Sept.	30	9.41	+0.4	327.84	165.41	-4.68	-42.84	-20.55	300.27
	1	9.31	0.4	328.21	166.47	4.23	42.67	20.29	301.45
	3	9.21	0.4	328.59	167.52	3.78	42.50	20.02	302.63
	5	9.12	0.4	328.97	168.55	3.34	42.32	19.74	303.81
	7	9.02	0.3	329.36	169.57	2.90	42.13	19.45	304.98
	9	8.92	+0.3	329.76	170.58	-2.48	-41.94	-19.16	306.14
	11	8.82	0.3	330.16	171.57	2.05	41.74	18.86	307.31
	13	8.71	0.3	330.56	172.54	1.64	41.54	18.56	308.47
	15	8.61	0.2	330.97	173.50	1.23	41.32	18.24	309.62
	17	8.51	0.2	331.38	174.44	0.84	41.09	17.93	310.78
	19	8.41	+0.2	331.79	175.37	-0.45	-40.86	-17.60	311.93
	21	8.30	0.2	332.20	176.27	-0.07	-40.62	-17.27	313.07
	23	8.20	0.1	332.60	177.16	+0.30	40.36	16.94	314.21
	25	8.10	0.1	333.01	178.02	0.66	40.09	16.60	315.35
	27	7.99	+0.1	333.41	178.87	1.00	39.82	16.25	316.48
Oct.	29	7.89	0.0	333.81	179.70	+1.34	-39.53	-15.90	317.61
	1	7.78	0.0	334.20	180.51	+1.66	-39.22	-15.55	318.74

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Ob	k	Diameter.	i	q	Q	Central Meridian.		Mean Time of Transit of Zero Meridian.	
						Of Date.	Of Intermediate Date.	Of Date.	Of Intermediate Date.
July	1	0.872	6.44	41.89	0.82	249.50	89.49	79.67	18 32.4
	3	0.871	6.49	42.06	0.84	249.83	69.85	60.04	19 53.1
	5	0.870	6.53	42.22	0.85	250.17	50.23	40.42	21 13.8
	7	0.869	6.58	42.38	0.86	250.52	30.61	20.81	22 34.4
	9	0.868	6.63	42.53	0.87	250.88	11.01	1.21	23 55.0
	11	0.868	6.67	42.68	0.88	251.25	351.42	341.63	00 35.3
	13	0.867	6.72	42.83	0.90	251.63	331.84	322.06	01 55.8
	15	0.866	6.77	42.97	0.91	252.02	312.28	302.50	03 16.2
	17	0.865	6.82	43.10	0.92	252.42	292.73	282.95	04 36.6
	19	0.864	6.87	43.23	0.93	252.83	273.19	263.42	05 56.9
	21	0.864	6.92	43.36	0.94	253.25	253.66	243.90	07 17.2
	23	0.863	6.98	43.48	0.96	253.67	234.15	224.39	08 37.4
	25	0.862	7.03	43.59	0.97	254.10	214.65	204.90	09 57.6
	27	0.862	7.09	43.70	0.98	254.54	195.16	185.42	11 17.7
	29	0.861	7.14	43.80	0.99	254.98	175.68	165.95	12 37.8
	31	0.860	7.20	43.90	1.01	255.43	156.22	146.49	13 57.8
Aug.	2	0.860	7.26	43.99	1.02	255.89	136.77	127.05	15 17.7
	4	0.859	7.32	44.08	1.03	256.35	117.33	107.62	16 37.6
	6	0.859	7.38	44.16	1.04	256.82	97.91	88.20	17 57.4
	8	0.858	7.45	44.23	1.06	257.29	78.49	68.79	19 17.2
	10	0.858	7.51	44.30	1.07	257.77	59.09	49.40	20 36.9
	12	0.858	7.58	44.36	1.08	258.25	39.71	30.02	21 56.6
	14	0.857	7.65	44.41	1.09	258.73	20.33	10.65	23 16.2
	16	0.857	7.72	44.45	1.10	259.21	0.97	351.29	...
	18	0.857	7.79	44.49	1.12	259.70	341.62	331.95	01 15.6
	20	0.857	7.86	44.52	1.13	260.18	322.28	312.62	02 35.0
Sept.	22	0.856	7.94	44.54	1.14	260.67	302.96	293.31	03 54.4
	24	0.856	8.02	44.55	1.15	261.16	283.65	274.00	05 13.8
	26	0.856	8.10	44.55	1.16	261.65	264.36	254.71	06 33.1
	28	0.856	8.18	44.54	1.18	262.13	245.88	235.44	07 52.3
	30	0.856	8.26	44.52	1.19	262.62	225.81	216.18	09 11.5
	1	0.857	8.35	44.49	1.20	263.10	206.55	196.93	10 30.7
	3	0.857	8.44	44.45	1.21	263.58	187.31	177.70	11 49.7
	5	0.857	8.53	44.40	1.22	264.05	168.08	158.48	13 08.7
	7	0.858	8.63	44.34	1.23	264.53	148.87	139.27	14 27.7
	9	0.858	8.72	44.26	1.24	264.99	129.67	120.08	15 46.5
Oct.	11	0.859	8.82	44.18	1.25	265.45	110.49	100.91	17 05.3
	13	0.859	8.93	44.07	1.26	265.91	91.33	81.75	18 24.1
	15	0.860	9.03	43.96	1.27	266.36	72.18	62.61	19 42.7
	17	0.861	9.14	43.83	1.27	266.80	53.05	43.49	21 01.3
	19	0.862	9.25	43.68	1.28	267.23	33.93	24.38	22 19.8
	21	0.863	9.37	43.51	1.29	267.65	14.84	5.30	23 38.2
	23	0.864	9.49	43.33	1.29	268.07	355.76	346.23	00 17.4
	25	0.865	9.61	43.13	1.30	268.48	336.70	327.18	01 35.7
	27	0.865	9.73	42.91	1.30	268.87	317.66	308.15	02 53.9
	29	0.868	9.86	42.67	1.30	269.25	298.64	289.14	04 12.1
	1	0.869	10.00	42.41	1.31	269.62	279.65	270.16	05 30.1

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Ch	Light-Time.	Stellar Magnitude.	P	$A_{\oplus} + 180^{\circ}$	D_{\oplus}	$A_{\odot} - A_{\oplus}$	D_{\odot}	$\odot \delta$
Oct.	^m 1 7.78	0.0	334.20	180.51	+1.66	-39.22	-15.55	318.74
	3 7.68	0.0	334.59	181.29	1.97	38.90	15.19	319.86
	5 7.57	0.0	334.97	182.05	2.27	38.57	14.83	320.98
	7 7.46	-0.1	335.35	182.79	2.55	38.22	14.46	322.10
	9 7.36	0.1	335.71	183.50	2.82	37.85	14.09	323.21
	11 7.25	-0.1	336.06	184.18	+3.07	-37.46	-13.72	324.31
	13 7.15	0.2	336.40	184.84	3.31	37.05	13.34	325.42
	15 7.04	0.2	336.73	185.47	3.53	36.62	12.96	326.52
	17 6.94	0.2	337.04	186.07	3.73	36.16	12.57	327.61
	19 6.84	0.3	337.34	186.63	3.92	35.68	12.19	328.70
	21 6.73	-0.3	337.62	187.16	+4.09	-35.17	-11.80	329.79
	23 6.63	0.4	337.89	187.66	4.24	34.64	11.41	330.88
	25 6.53	0.4	338.13	188.12	4.37	34.07	11.02	331.96
	27 6.43	0.4	338.36	188.55	4.48	33.48	10.62	333.04
	29 6.33	0.5	338.56	188.93	4.57	32.85	10.22	334.11
	31 6.23	-0.5	338.75	189.28	+4.64	-32.19	-9.82	335.18
Nov.	2 6.13	0.6	338.91	189.58	4.69	31.49	9.42	336.24
	4 6.04	0.6	339.04	189.84	4.72	30.75	9.02	337.30
	6 5.94	0.6	339.15	190.06	4.72	29.98	8.62	338.36
	8 5.85	0.7	339.23	190.22	4.70	29.16	8.22	339.42
	10 5.76	-0.7	339.28	190.34	+4.65	-28.30	-7.81	340.47
	12 5.68	0.8	339.30	190.41	4.58	27.40	7.40	341.52
	14 5.59	0.8	339.30	190.43	4.48	26.45	7.00	342.56
	16 5.51	0.9	339.26	190.40	4.36	25.45	6.59	343.60
	18 5.44	0.9	339.20	190.31	4.21	24.40	6.18	344.64
	20 5.36	-0.9	339.10	190.18	+4.04	-23.31	-5.77	345.67
Dec.	22 5.29	1.0	338.97	189.99	3.84	22.17	5.36	346.70
	24 5.23	1.0	338.81	189.74	3.62	20.99	4.95	347.73
	26 5.17	1.0	338.62	189.45	3.38	19.75	4.55	348.75
	28 5.11	1.1	338.41	189.11	3.11	18.47	4.14	349.77
	30 5.06	-1.2	338.16	188.72	+2.82	-17.15	-3.73	350.79
	2 5.01	1.2	337.89	188.28	2.51	15.78	3.32	351.80
	4 4.97	1.2	337.60	187.80	2.18	14.38	2.92	352.81
	6 4.94	1.3	337.28	187.28	1.83	12.93	2.51	353.82
	8 4.91	1.3	336.94	186.71	1.47	11.45	2.10	354.82
	10 4.89	-1.3	336.58	186.12	+1.09	-9.94	-1.70	355.82
	12 4.87	1.4	336.22	185.49	0.70	8.40	1.29	356.82
	14 4.86	1.4	335.84	184.84	+0.31	6.84	0.89	357.81
	16 4.86	1.4	335.45	184.18	-0.09	5.27	0.49	358.80
	18 4.87	1.4	335.06	183.50	0.48	3.69	-0.09	359.79
	20 4.88	-1.4	334.68	182.81	-0.88	-2.10	+0.31	0.77
	22 4.90	1.4	334.30	182.12	1.27	-0.52	0.71	1.75
	24 4.92	1.4	333.92	181.44	1.65	+1.06	1.11	2.73
	26 4.96	1.4	333.56	180.77	2.02	2.62	1.51	3.71
	28 5.00	1.3	333.21	180.12	2.37	4.16	1.90	4.68
	30 5.04	-1.3	332.88	179.48	-2.71	+5.68	+2.29	5.65
	32 5.10	-1.2	332.56	178.87	-3.03	+7.18	+2.68	6.62

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

ob	k	Diameter.	i	q	Q	Central Meridian.		Mean Time of Transit of Zero Meridian	
						Of Date.	Of Intermediate Date.	Of Date.	Of Intermediate Date.
Oct.	1	0.869	10.00	42.41	1.31	269.62	279.65	270.16	05 30.1
	3	0.871	10.13	42.13	1.31	269.98	260.67	251.19	06 48.1
	5	0.873	10.27	41.83	1.31	270.32	241.72	232.26	08 05.9
	7	0.875	10.42	41.50	1.31	270.65	222.80	213.34	09 23.6
	9	0.877	10.57	41.15	1.30	270.97	203.89	194.45	10 41.2
	11	0.879	10.72	40.76	1.30	271.26	185.02	175.59	11 58.8
	13	0.881	10.88	40.36	1.29	271.54	166.17	156.76	13 16.1
	15	0.884	11.04	39.92	1.29	271.80	147.35	137.96	14 33.4
	17	0.886	11.21	39.45	1.28	272.05	128.57	119.19	15 50.5
	19	0.889	11.38	38.95	1.26	272.27	109.81	100.45	17 07.5
	21	0.892	11.55	38.42	1.25	272.47	91.09	81.74	18 24.3
	23	0.895	11.73	37.85	1.23	272.65	72.40	63.07	19 41.0
	25	0.898	11.92	37.24	1.21	272.80	53.75	44.43	20 57.5
	27	0.901	12.10	36.59	1.19	272.93	35.13	25.84	22 13.9
	29	0.905	12.29	35.91	1.17	273.03	16.55	7.28	23 30.1
	31	0.909	12.49	35.18	1.14	273.10	358.02	348.76	00 08.1
Nov.	2	0.913	12.68	34.41	1.11	273.14	339.52	330.29	01 24.1
	4	0.917	12.88	33.59	1.08	273.15	321.07	311.86	02 39.8
	6	0.921	13.08	32.73	1.04	273.13	302.66	293.47	03 55.4
	8	0.925	13.29	31.82	1.00	273.07	284.30	275.13	05 10.7
	10	0.929	13.49	30.86	0.95	272.98	265.98	256.85	06 25.9
	12	0.934	13.70	29.85	0.91	272.84	247.72	238.61	07 40.8
	14	0.938	13.90	28.78	0.86	272.66	229.51	220.42	08 55.5
	16	0.943	14.11	27.66	0.81	272.42	211.34	202.28	10 10.0
	18	0.948	14.31	26.49	0.75	272.14	193.23	184.19	11 24.2
	20	0.952	14.50	25.26	0.69	271.80	175.17	166.16	12 38.3
Dec.	22	0.957	14.69	23.98	0.63	271.40	157.16	148.17	13 52.1
	24	0.961	14.88	22.65	0.57	270.93	139.20	130.24	15 05.7
	26	0.966	15.05	21.27	0.51	270.37	121.29	112.36	16 19.1
	28	0.970	15.22	19.83	0.45	269.73	103.43	94.52	17 32.3
	30	0.975	15.37	18.35	0.39	268.98	85.62	76.73	18 45.3
	2	0.979	15.51	16.82	0.33	268.09	67.85	58.99	19 58.1
	4	0.982	15.64	15.25	0.28	267.05	50.13	41.28	21 10.7
	6	0.986	15.75	13.64	0.22	265.78	32.44	23.62	22 23.1
	8	0.989	15.84	11.99	0.17	264.22	14.80	5.99	23 35.4
	10	0.992	15.91	10.32	0.13	262.23	357.18	348.39	00 11.5
	12	0.994	15.96	8.64	0.09	259.58	339.60	330.81	01 23.7
	14	0.996	15.99	6.95	0.06	255.79	322.03	313.26	02 35.7
	16	0.998	16.00	5.29	0.03	249.81	304.48	295.72	03 47.6
	18	0.999	15.98	3.71	0.02	238.91	286.95	278.18	04 59.5
	20	1.000	15.94	2.42	0.01	215.12	269.42	260.65	06 11.4
	22	1.000	15.88	2.05	0.01	169.01	251.88	243.11	07 23.3
	24	0.999	15.80	2.95	0.01	132.98	234.34	225.56	08 35.2
	26	0.998	15.69	4.39	0.02	116.93	216.79	208.00	09 47.2
	28	0.997	15.57	5.96	0.04	108.93	199.22	190.42	10 59.2
	30	0.996	15.42	7.57	0.07	104.19	181.62	172.81	12 11.4
	32	0.994	15.26	9.17	0.10	101.02	164.00	155.18	13 23.7

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER

Ch		Light-Time.	Stellar Magnitude.	P	$A_{\oplus} + 180^{\circ}$	D_{\oplus}	$A_{\odot} + 180^{\circ}$
Jan.	1	42.19	-1.9	334.54	220.64	+2.00	231.81
	8	43.07	1.9	334.54	221.62	2.01	232.45
	15	43.93	1.8	334.55	222.72	2.03	233.09
	22	44.75	1.8	334.56	223.91	2.05	233.73
	29	45.52	1.8	334.59	225.20	2.07	234.37
Feb.	5	46.23	-1.7	334.63	226.57	+2.10	235.01
	12	46.88	1.7	334.69	228.01	2.13	235.65
	19	47.47	1.7	334.76	229.51	2.16	236.30
	26	47.99	1.6	334.86	231.06	2.20	236.94
Mar.	4	48.43	1.6	334.97	232.66	2.24	237.58
May	1	49.03	-1.6	336.69	246.50	+2.62	242.90
	8	48.73	1.6	336.98	248.14	2.67	243.54
	15	48.36	1.6	337.28	249.74	2.72	244.18
	22	47.91	1.6	337.59	251.30	2.76	244.82
June	29	47.39	-1.7	337.91	252.82	+2.81	245.47
	5	46.81	1.7	338.23	254.28	2.85	246.11
	12	46.17	1.7	338.55	255.69	2.90	246.75
	19	45.48	1.8	338.87	257.02	2.94	247.39
July	26	44.74	1.8	339.18	258.28	2.98	248.03
	3	43.95	-1.8	339.47	259.45	+3.02	248.67
	10	43.13	1.9	339.75	260.52	3.06	249.31
	17	42.28	1.9	340.01	261.49	3.10	249.96
Aug.	24	41.41	2.0	340.25	262.34	3.14	250.60
	31	40.52	2.0	340.45	263.07	3.17	251.24
	7	39.64	-2.1	340.62	263.66	+3.21	251.88
	14	38.76	2.1	340.75	264.11	3.24	252.52
Sept.	21	37.90	2.2	340.83	264.40	3.27	253.16
	28	37.07	2.2	340.87	264.54	3.30	253.80
	4	36.29	2.2	340.87	264.51	3.32	254.44
	11	35.56	-2.3	340.81	264.32	+3.34	255.08
Oct.	18	34.90	2.3	340.71	263.97	3.36	255.72
	25	34.32	2.4	340.57	263.46	3.36	256.36
	2	33.84	2.4	340.40	262.82	3.37	257.00
	9	33.46	2.4	340.19	262.06	3.36	257.64
Nov.	16	33.19	-2.4	339.96	261.20	+3.35	258.28
	23	33.04	2.4	339.71	260.28	3.33	258.92
	30	33.02	2.4	339.47	259.33	3.31	259.55
	6	33.12	2.4	339.23	258.39	3.28	260.19
Dec.	13	33.35	2.4	339.00	257.49	3.24	260.83
	20	33.70	-2.4	338.80	256.67	+3.20	261.47
	27	34.16	2.4	338.63	255.95	3.16	262.11
	4	34.73	2.3	338.49	255.36	3.12	262.74
	11	35.38	2.3	338.39	254.92	3.07	263.38
	18	36.12	2.3	338.33	254.65	3.03	264.02
	25	36.93	-2.2	338.30	254.54	+2.99	264.65
	32	37.78	-2.2	338.31	254.60	+2.96	265.29

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER.

Ob	Equatorial Diameter.	Excess of Equat. Diameter over Polar.	δ	θ	φ	Central Meridian.		Correction for Phase.
						System I.	System II.	
Jan. 1	38.79	2.58	11.16	0.37	66.86	288.96	42.99	-0.54
8	37.99	2.53	10.82	0.34	66.98	312.74	13.36	0.51
15	37.25	2.48	10.37	0.30	67.11	336.42	343.64	0.47
22	36.57	2.43	9.82	0.27	67.26	0.03	313.84	0.42
29	35.95	2.39	9.17	0.23	67.43	23.57	283.98	0.37
Feb. 5	35.40	2.35	8.45	0.19	67.63	47.07	254.07	-0.31
12	34.90	2.32	7.65	0.16	67.88	70.53	224.13	0.25
19	34.47	2.29	6.79	0.12	68.19	93.97	194.16	0.20
26	34.10	2.27	5.88	0.09	68.59	117.40	164.18	0.15
Mar. 4	33.79	2.25	4.93	0.07	69.13	140.83	134.21	-0.11
May 1	33.38	2.22	3.60	0.03	244.88	284.83	195.66	+0.06
8	33.58	2.23	4.59	0.06	245.91	308.68	166.10	0.09
15	33.84	2.25	5.55	0.08	246.68	332.60	136.62	0.13
22	34.16	2.27	6.47	0.11	247.31	356.61	107.21	0.18
29	34.53	2.29	7.35	0.14	247.86	20.71	77.90	+0.23
June 5	34.96	2.32	8.17	0.18	248.36	44.90	48.67	0.29
12	35.44	2.35	8.93	0.22	248.82	69.18	19.55	0.35
19	35.98	2.39	9.62	0.25	249.26	93.57	350.52	0.40
26	36.58	2.43	10.23	0.29	249.67	118.07	321.60	0.45
July 3	37.23	2.47	10.76	0.33	250.07	142.63	292.80	+0.50
10	37.94	2.52	11.19	0.36	250.44	167.41	264.11	0.54
17	38.70	2.57	11.52	0.39	250.79	192.26	235.55	0.58
24	39.52	2.62	11.73	0.41	251.12	217.24	207.12	0.60
31	40.38	2.68	11.81	0.43	251.43	242.35	178.81	0.61
Aug. 7	41.28	2.74	11.77	0.43	251.72	267.60	150.65	+0.60
14	42.22	2.80	11.57	0.43	251.98	292.99	122.62	0.58
21	43.18	2.87	11.23	0.42	252.22	318.52	94.73	0.55
28	44.14	2.93	10.73	0.39	252.45	344.19	66.99	0.50
Sept. 4	45.09	2.99	10.06	0.35	252.66	9.99	39.38	0.44
11	46.02	3.05	9.23	0.30	252.88	35.92	11.90	+0.37
18	46.89	3.11	8.24	0.24	253.13	61.98	344.54	0.30
25	47.68	3.16	7.10	0.18	253.46	88.13	317.28	0.22
Oct. 2	48.36	3.21	5.82	0.12	253.94	114.37	290.11	0.15
9	48.91	3.25	4.43	0.07	254.80	140.67	262.99	0.09
16	49.30	3.27	2.94	0.03	256.66	166.99	235.90	+0.04
23	49.52	3.29	1.40	0.01	262.98	193.30	208.80	+0.01
30	49.56	3.29	0.37	0.00	16.61	219.56	181.65	0.00
Nov. 6	49.40	3.28	1.82	0.01	61.23	245.74	154.42	-0.01
13	49.06	3.26	3.34	0.04	65.45	271.80	127.07	0.05
20	48.56	3.22	4.80	0.08	66.94	297.71	99.58	-0.10
27	47.90	3.18	6.15	0.13	67.68	323.45	71.91	0.16
Dec. 4	47.12	3.13	7.37	0.19	68.13	348.99	44.04	0.24
11	46.25	3.07	8.45	0.25	68.45	14.33	15.97	0.31
18	45.30	3.01	9.36	0.30	68.70	39.45	347.69	0.38
25	44.31	2.94	10.10	0.34	68.92	64.37	319.20	-0.44
32	43.31	2.88	10.67	0.38	69.13	89.08	290.51	-0.49

JUPITER, 1928.

EPHIMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER.
SYSTEM I.

		Interval between Successive Transits.	Transit of Zero Meridian.	Interval between Successive Transits.	
Jan.	h m	June	h m	Sept.	h m
1 08 03.57	9 50.64	4 22 45.87	9 50.59	19 13 39.58	9 50.42
5 01 10.12		6 23 58.84		21 14 51.71	
9 04 23.86		9 01 11.81		23 16 03.83	
13 07 37.08		11 02 24.76		25 17 15.94	
17 10 50.32		13 03 37.69		27 18 28.03	
21 14 03.57	9 50.65	15 04 50.61	9 50.58	29 19 40.11	9 50.41
25 17 16.84		17 06 03.52		1 20 52.18	
29 20 30.11		19 07 16.41		3 22 04.24	
1 11 43.39		21 08 29.29		5 23 16.30	
5 14 56.66		23 09 42.15		8 00 28.35	
9 18 09.93	9 50.66	25 10 55.00	9 50.56	10 01 40.39	9 50.41
13 21 23.20		27 12 07.83		12 02 52.42	
17 24 36.47		29 13 20.64		14 04 04.46	
21 27 49.73		1 14 33.44		16 05 16.49	
25 31 03.00		3 15 46.23		18 06 28.51	
29 34 16.26	9 50.67	5 16 59.00	9 50.55	20 07 40.54	9 50.41
1 37 29.53		7 18 11.75		22 08 52.57	
5 40 42.79		9 19 24.49		24 10 04.60	
9 43 56.05		11 20 37.21		26 11 16.64	
13 47 09.31		13 21 49.92		28 12 28.69	
17 50 22.57	9 50.67	15 23 02.61	9 50.53	30 13 40.74	9 50.42
21 53 35.83		18 00 15.28		1 14 52.81	
25 56 49.09		20 01 27.93		3 16 04.90	
29 59 62.35		22 02 40.57		5 17 17.00	
1 02 15.61		24 03 53.19		7 18 29.12	
5 05 28.87	9 50.68	26 05 05.80	9 50.51	9 19 41.26	9 50.44
9 08 42.13		28 06 18.39		11 20 53.43	
13 11 55.39		30 07 30.96		13 22 05.62	
17 15 08.65		1 08 43.52		15 23 17.83	
21 18 21.91		3 09 56.05		18 00 30.07	
25 21 35.17	9 50.67	5 11 08.57	9 50.50	20 01 42.33	9 50.46
29 24 48.43		7 12 21.08		22 02 54.62	
1 27 61.69		9 13 33.56		24 04 06.93	
5 30 74.95		11 14 46.03		26 05 19.28	
9 33 88.21		13 15 58.48		28 06 31.65	
13 37 01.47	9 50.64	15 17 10.91	9 50.48	30 07 44.06	9 50.49
17 40 14.73		17 18 23.32		2 08 56.49	
21 43 27.99		19 19 35.71		4 10 08.94	
25 46 41.25		21 20 48.09		6 11 21.43	
29 49 54.51		23 22 00.45		8 12 33.95	
1 52 67.77	9 50.62	25 23 12.79	9 50.46	10 13 46.50	9 50.52
5 55 81.03		28 00 25.12		12 14 59.07	
9 58 94.29		30 01 37.43		14 16 11.68	
13 02 07.55		1 02 49.72		16 17 24.31	
17 05 20.81		3 04 01.99		18 18 36.97	
21 08 34.07	9 50.61	5 05 14.24	9 50.44	20 19 49.67	9 50.55
25 11 47.33		7 06 26.48		22 21 02.39	
29 14 60.59		9 07 38.70		24 22 15.13	
1 17 73.85		11 08 50.91		26 23 27.91	
5 20 87.11		13 10 03.10		29 00 40.71	
9 23 00.37	9 50.60	15 11 15.27	9 50.43	31 01 53.54	9 50.57
13 26 13.63		17 12 27.43		33 03 06.39	

JUPITER, 1928.

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EPHEMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER. SYSTEM II.

Transit of Zero Meridian.	Interval between Successive Transits.	Transit of Zero Meridian.	Interval between Successive Transits.	Transit of Zero Meridian.	Interval between Successive Transits.		
Jan. d h m 1 08 45.56 3 10 24.66 5 12 03.77 7 13 42.90 9 15 22.04 11 17 01.19 13 18 40.35 15 20 19.52 17 21 58.70 19 23 37.89 22 01 17.09 24 02 56.30 26 04 35.52 28 06 14.74 30 07 53.97	h m 9 55.82 9 55.83 9 55.84 9 55.85	June d h m 5 08 34.74 7 10 13.61 9 11 52.47 11 13 31.31 13 15 10.14 15 16 48.95 17 18 27.75 19 20 06.53 21 21 45.30 23 23 24.05 26 01 02.79 28 02 41.51 30 04 20.21 July 2 05 58.90 4 07 37.57 6 09 16.23 8 10 54.87 10 12 33.49 12 14 12.10 14 15 50.69 16 17 29.26 18 19 07.82 20 20 46.36 22 22 24.89 25 00 03.39 27 01 41.88 29 03 20.35 31 04 58.81 Aug. 2 06 37.24 4 08 15.66 6 09 54.06 8 11 32.44 10 13 10.80 12 14 49.15 14 16 27.47 16 18 05.78 18 19 44.07 20 21 22.34 22 23 00.60 25 00 38.83 27 02 17.05 29 03 55.25 31 05 33.44 Sept. 2 07 11.60 4 08 49.75 6 10 27.88 8 12 05.99 10 13 44.08 12 15 22.16 14 17 00.22 16 18 38.27 18 20 16.30	h m 9 55.77 9 55.76 9 55.74 9 55.72 9 55.71 9 55.69 9 55.67 9 55.65 9 55.64 9 55.62 9 55.60	Sept. d h m 20 21 54.31 22 23 32.32 25 01 10.31 27 02 48.28 29 04 26.25 Oct. 1 06 04.20 3 07 42.15 5 09 20.08 7 10 58.01 9 12 35.93 11 14 13.85 13 15 51.76 15 17 29.67 17 19 07.57 19 20 45.48 21 22 23.39 24 00 01.30 26 01 39.21 28 03 17.13 30 04 55.06 Nov. 1 06 33.01 3 08 10.97 5 09 48.95 7 11 26.94 9 13 04.96 11 14 43.00 13 16 21.07 15 17 59.16 17 19 37.27 19 21 15.41 21 22 53.58 24 00 31.78 26 02 10.00 28 03 48.25 30 05 26.54 Dec. 2 07 04.85 4 08 43.19 6 10 21.56 8 11 59.96 10 13 38.40 12 15 16.86 14 16 55.35 16 18 33.87 18 20 12.42 20 21 51.00 22 23 29.61 25 01 08.25 27 02 46.91 29 04 25.60 31 06 04.32 33 07 43.06 35 09 21.83	h m 9 55.60 9 55.59 9 55.58 9 55.58 9 55.60 9 55.62 9 55.64 9 55.67 9 55.70 9 55.73 9 55.75		
Feb. d h m 1 09 33.21 3 11 12.45 5 12 51.70 7 14 30.95 9 16 10.20 11 17 49.46 13 19 28.73 15 21 07.99 17 22 47.26 20 00 26.53 22 02 05.81 24 03 45.08 26 05 24.36 28 07 03.63	h m 9 55.85 9 55.85 9 55.86	Mar. d h m 1 08 42.91 3 10 22.19 5 12 01.46 7 13 40.73 9 15 20.00 11 12 47.23 13 14 26.26 15 16 05.28 17 17 44.29 19 19 23.28 21 21 02.26 23 22 41.23 26 00 20.18 28 01 59.12 30 03 38.05	h m 9 55.85 9 55.82 9 55.80 9 55.79 9 55.78	May d h m 1 04 31.89 3 06 10.98 5 07 50.06 7 09 29.13 9 11 08.19 11 12 47.23 13 14 26.26 15 16 05.28 17 17 44.29 19 19 23.28 21 21 02.26 23 22 41.23 26 00 20.18 28 01 59.12 30 03 38.05	h m 9 55.82 9 55.80 9 55.79 9 55.78	June d h m 1 05 16.96 3 06 55.86	h m 9 55.78

TABLES.

For converting INTERVALS of MEAN SOLAR Time into Equivalent INTERVALS of
SIDEREAL Time.

For conv.

HOURS.			MINUTES.				SECONDS.					
Hour of Mean Time.	Equivalents in Sidereal Time.		Minute of Mean Time.	Equivalents in Sidereal Time.	Minute of Mean Time.	Equivalents in Sidereal Time.	Second of Mean Time.	Equivalents in Sidereal Time.	Second of Mean Time.	Equivalents in Sidereal Time.	Second of Mean Time.	Equivalents in Sidereal Time.
01	h	m s	01	m s	31	m s	01	s	31	s	01	s
02	01 00	09.8565	01	01 00.1643	31	01 05.0925	01	01.0027	31	01.0849	01	01
03	02 00	19.7129	02	02 00.3285	32	02 05.2568	02	02.0055	32	02.0876	02	02
04	03 00	29.5694	03	03 00.4928	33	03 05.4211	03	03.0082	33	03.0904	03	03
05	04 00	39.4259	04	04 00.6571	34	04 05.5853	04	04.0110	34	04.0931	04	04
06	05 00	49.2824	05	05 00.8214	35	05 05.7496	05	05.0137	35	05.0958	05	05
07	06 00	59.1388	06	06 00.9856	36	06 05.9139	06	06.0164	36	06.0986	06	06
08	07 01	08.9953	07	07 01.1499	37	07 06.0782	07	07.0192	37	07.1013	07	07
09	08 01	18.8518	08	08 01.3142	38	08 06.2424	08	08.0219	38	08.1040	08	08
10	09 01	28.7083	09	09 01.4785	39	09 06.4067	09	09.0246	39	09.1068	09	09
11	10 01	38.5647	10	10 01.6427	40	10 06.5710	10	10.0274	40	10.1095	10	10
12	11 01	48.4212	11	11 01.8070	41	11 06.7353	11	11.0301	41	11.1123	11	11
13	12 01	58.2777	12	12 01.9713	42	12 06.8995	12	12.0329	42	12.1150	12	12
14	13 02	08.1342	13	13 02.1356	43	13 07.0638	13	13.0356	43	13.1177	13	13
15	14 02	17.9906	14	14 02.2998	44	14 07.2281	14	14.0383	44	14.1205	14	14
16	15 02	27.8471	15	15 02.4641	45	15 07.3924	15	15.0411	45	15.1232	15	15
17	16 02	37.7036	16	16 02.6284	46	16 07.5566	16	16.0438	46	16.1259	16	16
18	17 02	47.5600	17	17 02.7927	47	17 07.7209	17	17.0465	47	17.1287	17	17
19	18 02	57.4165	18	18 02.9569	48	18 07.8852	18	18.0493	48	18.1314	18	18
20	19 03	07.2730	19	19 03.1212	49	19 08.0495	19	19.0520	49	19.1342	19	19
21	20 03	17.1295	20	20 03.2855	50	20 08.2137	20	20.0548	50	20.1369	20	20
22	21 03	26.9859	21	21 03.4498	51	21 08.3780	21	21.0575	51	21.1396	21	21
23	22 03	36.8424	22	22 03.6140	52	22 08.5423	22	22.0602	52	22.1424	22	22
24	23 03	46.6989	23	23 03.7783	53	23 08.7066	23	23.0630	53	23.1451	23	23
25	24 03	56.5554	24	24 03.9426	54	24 08.8708	24	24.0657	54	24.1478	24	24
26			25	25 04.1069	55	25 09.0351	25	25.0684	55	25.1506	25	25
27			26	26 04.2711	56	26 09.1994	26	26.0712	56	26.1533	26	26
28			27	27 04.4354	57	27 09.3636	27	27.0739	57	27.1561	27	27
29			28	28 04.5997	58	28 09.5279	28	28.0767	58	28.1588	28	28
30			29	29 04.7640	59	29 09.6922	29	29.0794	59	29.1615	29	29
			30	30 04.9282	60	30 09.8565	30	30.0821	60	30.1643	30	30

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Exam

For converting INTERVALS of MEAN SOLAR Time into Equivalent INTERVALS of
SIDEREAL Time.

FRACTIONS OF A SECOND.

Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.
0.01	^s 0.01003	0.21	^s 0.21057	0.41	^s 0.41112	0.61	^s 0.61167	0.81	^s 0.81222
0.02	0.02005	0.22	0.22060	0.42	0.42115	0.62	0.62170	0.82	0.82225
0.03	0.03008	0.23	0.23063	0.43	0.43118	0.63	0.63172	0.83	0.83227
0.04	0.04011	0.24	0.24066	0.44	0.44120	0.64	0.64175	0.84	0.84230
0.05	0.05014	0.25	0.25068	0.45	0.45123	0.65	0.65178	0.85	0.85233
0.06	0.06016	0.26	0.26071	0.46	0.46126	0.66	0.66181	0.86	0.86235
0.07	0.07019	0.27	0.27074	0.47	0.47129	0.67	0.67183	0.87	0.87238
0.08	0.08022	0.28	0.28077	0.48	0.48131	0.68	0.68186	0.88	0.88241
0.09	0.09025	0.29	0.29079	0.49	0.49134	0.69	0.69189	0.89	0.89244
0.10	0.10027	0.30	0.30082	0.50	0.50137	0.70	0.70192	0.90	0.90246
0.11	0.11030	0.31	0.31085	0.51	0.51140	0.71	0.71194	0.91	0.91249
0.12	0.12033	0.32	0.32088	0.52	0.52142	0.72	0.72197	0.92	0.92252
0.13	0.13036	0.33	0.33090	0.53	0.53145	0.73	0.73200	0.93	0.93255
0.14	0.14038	0.34	0.34093	0.54	0.54148	0.74	0.74203	0.94	0.94257
0.15	0.15041	0.35	0.35096	0.55	0.55151	0.75	0.75205	0.95	0.95260
0.16	0.16044	0.36	0.36099	0.56	0.56153	0.76	0.76208	0.96	0.96263
0.17	0.17047	0.37	0.37101	0.57	0.57156	0.77	0.77211	0.97	0.97266
0.18	0.18049	0.38	0.38104	0.58	0.58159	0.78	0.78214	0.98	0.98268
0.19	0.19052	0.39	0.39107	0.59	0.59162	0.79	0.79216	0.99	0.99271
0.20	0.20055	0.40	0.40110	0.60	0.60164	0.80	0.80219	1.00	1.00274

Sidereal Time *required* = Sidereal Time at the *preceding* Mean Noon + the Equivalent to the
Mean Time elapsed since the preceding Mean Noon.

Example.—To convert 02^h 25^m 18^s.96 Mean Time at Greenwich, Jan. 20, 1928, into Sidereal Time.

Sidereal Time at the <i>preceding</i> Mean Noon, viz., January 19. .	..	19 50 34.56
For Mean Intervals { 14 ^h 00 ^m 00 ^s }	the Table gives the Equivalent	14 02 17.991
{ 25 00 }	Sidereal Intervals	25 04.107
{ 18 }		18.049
{ 00.96 }		00.963
The Sum is the Sidereal Time required ..	..	10 18 15.67

For converting INTERVALS of SIDEREAL Time into Equivalent INTERVALS of
MEAN SOLAR Time.

HOURS.			MINUTES.			SECONDS.		
Hours of sidereal Time.	Equivalents in Mean Time.		Minutes of Sidereal Time.	Equivalents in Mean Time.		Seconds of Sidereal Time.	Equivalents in Mean Time.	
	h	m	s		m	s		s
01	00	59	50.1704	01	00	59.8362	31	30.9154
02	01	59	40.3409	02	01	59.6723	32	31.9126
03	02	59	30.5113	03	02	59.5085	33	32.9099
04	03	59	20.6818	04	03	59.3447	34	33.9072
05	04	59	10.8522	05	04	59.1809	35	34.9044
06	05	59	01.0226	06	05	59.0170	36	35.9017
07	06	58	51.1931	07	06	58.8532	37	36.8990
08	07	58	41.3635	08	07	58.6894	38	37.8962
09	08	58	31.5340	09	08	58.5256	39	38.8935
10	09	58	21.7044	10	09	58.3617	40	39.8908
11	10	58	11.8748	11	10	58.1979	41	40.8881
12	11	58	02.0453	12	11	58.0341	42	41.8853
13	12	57	52.2157	13	12	57.8703	43	42.8826
14	13	57	42.3861	14	13	57.7064	44	43.8799
15	14	57	32.5566	15	14	57.5426	45	44.8771
16	15	57	22.7270	16	15	57.3788	46	45.8744
17	16	57	12.8975	17	16	57.2150	47	46.8717
18	17	57	03.0679	18	17	57.0511	48	47.8689
19	18	56	53.2383	19	18	56.8873	49	48.8662
20	19	56	43.4088	20	19	56.7235	50	49.8635
21	20	56	33.5792	21	20	56.5597	51	50.8607
22	21	56	23.7497	22	21	56.3958	52	51.8580
23	22	56	13.9201	23	22	56.2320	53	52.8553
24	23	56	04.0905	24	23	56.0682	54	53.8526
				25	24	55.0043	55	54.8498
				26	25	55.7405	56	55.8471
				27	26	55.5767	57	56.8444
				28	27	55.4129	58	57.8416
				29	28	55.2490	59	58.8389
				30	29	55.0852	60	59.8362

For converting INTERVALS of SIDEREAL Time into Equivalent INTERVALS of
MEAN SOLAR Time.

FRACTIONS OF A SECOND.

Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.
0.01	^s 0.00997	0.21	^s 0.20943	0.41	^s 0.40888	0.61	^s 0.60833	0.81	^s 0.80779
0.02	0.01995	0.22	0.21940	0.42	0.41885	0.62	0.61831	0.82	0.81776
0.03	0.02992	0.23	0.22937	0.43	0.42883	0.63	0.62828	0.83	0.82773
0.04	0.03989	0.24	0.23934	0.44	0.43880	0.64	0.63825	0.84	0.83771
0.05	0.04986	0.25	0.24932	0.45	0.44877	0.65	0.64823	0.85	0.84768
0.06	0.05984	0.26	0.25929	0.46	0.45874	0.66	0.65820	0.86	0.85765
0.07	0.06981	0.27	0.26926	0.47	0.46872	0.67	0.66817	0.87	0.86762
0.08	0.07978	0.28	0.27924	0.48	0.47869	0.68	0.67814	0.88	0.87760
0.09	0.08975	0.29	0.28921	0.49	0.48866	0.69	0.68812	0.89	0.88757
0.10	0.09973	0.30	0.29918	0.50	0.49863	0.70	0.69809	0.90	0.89754
0.11	0.10970	0.31	0.30915	0.51	0.50861	0.71	0.70806	0.91	0.90752
0.12	0.11967	0.32	0.31913	0.52	0.51858	0.72	0.71803	0.92	0.91749
0.13	0.12965	0.33	0.32910	0.53	0.52855	0.73	0.72801	0.93	0.92746
0.14	0.13962	0.34	0.33907	0.54	0.53853	0.74	0.73798	0.94	0.93743
0.15	0.14959	0.35	0.34904	0.55	0.54850	0.75	0.74795	0.95	0.94741
0.16	0.15956	0.36	0.35902	0.56	0.55847	0.76	0.75792	0.96	0.95738
0.17	0.16954	0.37	0.36899	0.57	0.56844	0.77	0.76790	0.97	0.96735
0.18	0.17951	0.38	0.37896	0.58	0.57842	0.78	0.77787	0.98	0.97732
0.19	0.18948	0.39	0.38894	0.59	0.58839	0.79	0.78784	0.99	0.98730
0.20	0.19945	0.40	0.39891	0.60	0.59836	0.80	0.79782	1.00	0.99727

Mean Solar Time *required* = Mean Time at the *preceding* Sidereal Noon (Mean Time of Transit of the First Point of Aries, page III) + the Equivalent to the *given* Sidereal Time.

Example.—To convert 10^h 18^m 15^s.67 Sidereal Time at Greenwich, Jan. 20, 1928, into Mean Time.

Mean Time at the <i>preceding</i> Sidereal Noon, viz., January 19..		h	m	s
		16	08	44.58
For Sidereal Intervals	{ 10 ^h 00 ^m 00 ^s 18 00 15 00.67 }	the Table gives the Equivalent Mean Intervals		
		09	58	21.704
		17	57	05.1
			14	9.59
			00	66.8

The Sum is the Mean Time required Jan. 20 .. 02 25 18.96

DAY OF THE YEAR, &c., 1928.

DAY AND FRACTION OF THE YEAR FROM JAN. 1.

Day of the Month.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*
1	0	.00000	31	.08488	60	.16427	91	.24915	121	.33129	152	.41616
2	1	.00274	32	.08761	61	.16701	92	.25189	122	.33402	153	.41890
3	2	.00548	33	.09035	62	.16975	93	.25463	123	.33676	154	.42164
4	3	.00821	34	.09309	63	.17249	94	.25736	124	.33950	155	.42438
5	4	.01095	35	.09583	64	.17523	95	.26010	125	.34224	156	.42711
6	5	.01369	36	.09856	65	.17796	96	.26284	126	.34498	157	.42985
7	6	.01643	37	.10130	66	.18070	97	.26558	127	.34771	158	.43259
8	7	.01917	38	.10404	67	.18344	98	.26832	128	.35045	159	.43533
9	8	.02190	39	.10678	68	.18618	99	.27105	129	.35319	160	.43807
10	9	.02464	40	.10952	69	.18892	100	.27379	130	.35593	161	.44080
11	10	.02738	41	.11225	70	.19165	101	.27653	131	.35867	162	.44354
12	11	.03012	42	.11499	71	.19439	102	.27927	132	.36140	163	.44628
13	12	.03285	43	.11773	72	.19713	103	.28200	133	.36414	164	.44902
14	13	.03559	44	.12047	73	.19987	104	.28474	134	.36688	165	.45176
15	14	.03833	45	.12321	74	.20261	105	.28748	135	.36962	166	.45449
16	15	.04107	46	.12594	75	.20534	106	.29022	136	.37236	167	.45723
17	16	.04381	47	.12868	76	.20808	107	.29296	137	.37509	168	.45997
18	17	.04654	48	.13142	77	.21082	108	.29569	138	.37783	169	.46271
19	18	.04928	49	.13416	78	.21356	109	.29843	139	.38057	170	.46544
20	19	.05202	50	.13690	79	.21629	110	.30117	140	.38331	171	.46818
21	20	.05476	51	.13963	80	.21903	111	.30391	141	.38605	172	.47092
22	21	.05750	52	.14237	81	.22177	112	.30665	142	.38878	173	.47366
23	22	.06023	53	.14511	82	.22451	113	.30938	143	.39152	174	.47640
24	23	.06297	54	.14785	83	.22725	114	.31212	144	.39426	175	.47913
25	24	.06571	55	.15059	84	.22998	115	.31486	145	.39700	176	.48187
26	25	.06845	56	.15332	85	.23272	116	.31760	146	.39973	177	.48461
27	26	.07119	57	.15606	86	.23546	117	.32034	147	.40247	178	.48735
28	27	.07392	58	.15880	87	.23820	118	.32307	148	.40521	179	.49009
29	28	.07666	59	.16154	88	.24094	119	.32581	149	.40795	180	.49282
30	29	.07940			89	.24367	120	.32855	150	.41069	181	.49556
31	30	.08214			90	.24641			151	.41342		

* From the time when the Sun's Mean Longitude is 280° the Fraction of the Year at Jan. 1st 00h is —.00163, and at Jan. 1st 12h is —.00026.

DAY AND FRACTION OF THE YEAR FROM JAN. 1.

Day of the Month.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*
1	182	.49830	213	.58317	244	.66805	274	.75019	305	.83506	335	.91720
2	183	.50104	214	.58591	245	.67079	275	.75293	306	.83780	336	.91994
3	184	.50378	215	.58865	246	.67353	276	.75566	307	.84054	337	.92268
4	185	.50651	216	.59139	247	.67626	277	.75840	308	.84328	338	.92541
5	186	.50925	217	.59413	248	.67900	278	.76114	309	.84601	339	.92815
6	187	.51199	218	.59686	249	.68174	279	.76388	310	.84875	340	.93089
7	188	.51473	219	.59960	250	.68448	280	.76661	311	.85149	341	.93363
8	189	.51746	220	.60234	251	.68722	281	.76935	312	.85423	342	.93636
9	190	.52020	221	.60508	252	.68995	282	.77209	313	.85697	343	.93910
10	191	.52294	222	.60782	253	.69269	283	.77483	314	.85970	344	.94184
11	192	.52568	223	.61055	254	.69543	284	.77757	315	.86244	345	.94458
12	193	.52842	224	.61329	255	.69817	285	.78030	316	.86518	346	.94732
13	194	.53115	225	.61603	256	.70090	286	.78304	317	.86792	347	.95005
14	195	.53389	226	.61877	257	.70364	287	.78578	318	.87066	348	.95279
15	196	.53663	227	.62151	258	.70638	288	.78852	319	.87339	349	.95553
16	197	.53937	228	.62424	259	.70912	289	.79126	320	.87613	350	.95827
17	198	.54211	229	.62698	260	.71186	290	.79399	321	.87887	351	.96101
18	199	.54484	230	.62972	261	.71459	291	.79673	322	.88161	352	.96374
19	200	.54758	231	.63246	262	.71733	292	.79947	323	.88434	353	.96648
20	201	.55032	232	.63519	263	.72007	293	.80221	324	.88708	354	.96922
21	202	.55306	233	.63793	264	.72281	294	.80495	325	.88982	355	.97196
22	203	.55580	234	.64067	265	.72555	295	.80768	326	.89256	356	.97470
23	204	.55853	235	.64341	266	.72828	296	.81042	327	.89530	357	.97743
24	205	.56127	236	.64615	267	.73102	297	.81316	328	.89803	358	.98017
25	206	.56401	237	.64888	268	.73376	298	.81590	329	.90077	359	.98291
26	207	.56675	238	.65162	269	.73650	299	.81863	330	.90351	360	.98565
27	208	.56949	239	.65436	270	.73924	300	.82137	331	.90625	361	.98839
28	209	.57222	240	.65710	271	.74197	301	.82411	332	.90899	362	.99112
29	210	.57496	241	.65984	272	.74471	302	.82685	333	.91172	363	.99386
30	211	.57770	242	.66257	273	.74745	303	.82959	334	.91446	364	.99660
31	212	.58044	243	.66531			304	.83232			365	.99934

* From the time when the Sun's Mean Longitude is 280° the Fraction of the Year at Jan. 1^d 00^h is —.00163, and at Jan. 1^d 12^h is —.00026.

JULIAN PERIOD.

Days elapsed at Mean Noon of Jan. 1 of each year of the Table.											Days elapsed at Mean Noon.	
A.D.	0.	200	400	600	800	1000	1200	1400	1600	1800	Date.	1928
	17	17	18	19	20	20	21	22	23	23		
0	21058	94108	67158	40208	13258	86308	59358	32408	05448	78497*		
4	22519	95569	68619	41669	14719	87769	60819	33869	06909	79957		2425
8	23980	97030	70080	43130	16180	89230	62280	35330	08370	81418	Jan. 1	247
12	25441	98491	71541	44591	17641	90691	63741	36791	09831	82879	11	257
16	26902	99952	73002	46052	19102	92152	65202	38252	11292	84340	21	267
20	28363	01413	74463	47513	20563	93613	66663	39713	12753	85801	31	277
24	29824	02874	75924	48974	22024	95074	68124	41174	14214	87262	Feb. 10	287
28	31285	04335	77385	50435	23485	96535	69585	42635	15675	88723	20	297
32	32746	05796	78846	51896	24946	97996	71046	44096	17136	90184	Mar. 1	307
36	34207	07257	80307	53357	26407	99457	72507	45557	18597	91645	11	317
40	35668	08718	81768	54818	27868	00918	73968	47018	20058	93106		
44	37129	10179	83229	56279	29329	02379	75429	48479	21519	94567	21	327
48	38590	11640	84690	57740	30790	03840	76890	49940	22980	96028	31	337
52	40051	13101	86151	59201	32251	05301	78351	51401	24441	97489	Apr. 10	347
56	41512	14562	87612	60662	33712	06762	79812	52862	25902	98950	20	357
60	42973	16023	89073	62123	35173	08223	81273	54323	27363	00411	30	367
64	44434	17484	90534	63584	36634	09684	82734	55784	28824	01872	May 10	377
68	45895	18945	91995	65045	38095	11145	84195	57245	30285	03333	20	387
72	47356	20406	93456	66506	39556	12606	85656	58706	31746	04794	30	397
76	48817	21867	94917	67967	41017	14067	87117	60167	33207	06255	June 9	407
80	50278	23328	96378	69428	42478	15528	88578	61628	34668	07716	19	417
84	51739	24789	97839	70889	43939	16989	90039	63089	36129	09177	29	427
88	53200	26250	99300	72350	45400	18450	91500	64550	37590	10638	July 9	437
92	54661	27711	00761	73811	46861	19911	92961	66011	39051	12099		
96	56122	29172	02222	75272	48322	21372	94422	67472	40512	13560	19	447
100	57583	30633	03683	76733	49783	22833	95883	68933	41973*	15021*	29	457
104	59044	32094	05144	78194	51244	24294	97344	70394	43433	16481	Aug. 8	467
108	60505	33555	06605	79655	52705	25755	98805	71855	44894	17942	18	477
112	61966	35016	08066	81116	54166	27216	00266	73316	46355	19403	28	487
116	63427	36477	09527	82577	55627	28677	01727	74777	47816	20864	Sept. 7	497
120	64888	37938	10988	84038	57088	30138	03188	76238	49277	22325	17	507
124	66349	39399	12449	85499	58549	31599	04649	77699	50738	23786	27	517
128	67810	40860	13910	86960	60010	33060	06110	79160	52199	25247	Oct. 7	527
132	69271	42321	15371	88421	61471	34521	07571	80621	53660	26708	17	537
136	70732	43782	16832	89882	62932	35982	09032	82082	55121	28169	27	547
140	72193	45243	18293	91343	64393	37443	10493	83543	56582	29630	Nov. 6	557
144	73654	46704	19754	92804	65854	38904	11954	85004	58043	31091		
148	75115	48165	21215	94265	67315	40365	13415	86465	59504	32552	16	567
152	76576	49626	22676	95726	68776	41826	14876	87926	60965	34013	26	577
156	78037	51087	24137	97187	70237	43287	16337	89387	62426	35474	Dec. 6	587
160	79498	52548	25598	98648	71698	44748	17798	90848	63887	36935	16	597
164	80959	54009	27059	00109	73159	46209	19259	92309	65348	38396	26	607
168	82420	55470	28520	01570	74620	47670	20720	93770	66809	39857	36	617
172	83881	56931	29981	03031	76081	49131	22181	95231	68270	41318		
176	85342	58392	31442	04492	77542	50592	23642	96692	69731	42779		
180	86803	59853	32903	05953	79003	52053	25103	98153	71192	44240		
								See end of Table.			A.D.	Days.
184	88264	61314	34364	07414	80464	53514	26564	99604	72653	45701	1580	2298153
188	89725	62775	35825	08875	81925	54975	28025	01065	74114	47162	1581	8519
192	91186	64236	37286	10336	83386	56436	29486	02526	75575	48623	1582	8884
196	92647	65697	38747	11797	84847	57897	30947	03987	77036	50084	1583	9239
	17	18	19	20	20	21	22	23	23	24	1584	9604

* denotes a common year.

TABLES.

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For COMPUTING the GEOCENTRIC CO-ORDINATES of a PLACE.

ϕ	log. X.	log. Y.	ϕ	log. X.	log. Y.
0			0		
1	9.9970705	0.0000000	40	9.9976745	0.0006040
2	9.9970723	0.0000004	41	9.9976997	0.0006292
3	9.9970745	0.0000018	42	9.9977251	0.0006546
4	9.9970776	0.0000040	43	9.9977506	0.0006801
5	9.9970816	0.0000071	44	9.9977761	0.0007056
6	9.9970865	0.0000111	45	9.9978016	0.0007311
7	9.9970922	0.0000160	46	9.9978272	0.0007567
8	9.9970988	0.0000217	47	9.9978527	0.0007822
9	9.9971062	0.0000283	48	9.9978782	0.0008077
10	9.9971145	0.0000357	49	9.9979036	0.0008331
11	9.9971237	0.0000440	50	9.9979288	0.0008583
12	9.9971336	0.0000532	51	9.9979540	0.0008835
13	9.9971444	0.0000631	52	9.9979789	0.0009084
14	9.9971560	0.0000739	53	9.9980036	0.0009331
15	9.9971683	0.0000855	54	9.9980281	0.0009576
16	9.9971814	0.0000978	55	9.9980523	0.0009818
17	9.9971953	0.0001109	56	9.9980762	0.0010057
18	9.9972099	0.0001248	57	9.9980997	0.0010292
19	9.9972253	0.0001394	58	9.9981229	0.0010524
20	9.9972413	0.0001548	59	9.9981457	0.0010752
21	9.9972581	0.0001708	60	9.9981681	0.0010976
22	9.9972755	0.0001876	61	9.9981901	0.0011196
23	9.9972935	0.0002050	62	9.9982116	0.0011411
24	9.9973122	0.0002230	63	9.9982325	0.0011620
25	9.9973314	0.0002417	64	9.9982530	0.0011825
26	9.9973512	0.0002609	65	9.9982729	0.0012024
27	9.9973716	0.0002807	66	9.9982922	0.0012217
28	9.9973925	0.0003011	67	9.9983110	0.0012405
29	9.9974139	0.0003220	68	9.9983291	0.0012586
30	9.9974358	0.0003434	69	9.9983466	0.0012761
31	9.9974581	0.0003653	70	9.9983634	0.0012929
32	9.9974808	0.0003876	71	9.9983795	0.0013090
33	9.9975040	0.0004103	72	9.9983949	0.0013244
34	9.9975275	0.0004335	73	9.9984096	0.0013391
35	9.9975513	0.0004570	74	9.9984236	0.0013531
36	9.9975754	0.0004808	75	9.9984368	0.0013663
37	9.9975999	0.0005049	76	9.9984492	0.0013787
38	9.9976245	0.0005294	77	9.9984609	0.0013904
39	9.9976494	0.0005540	78	9.9984717	0.0014012
40	9.9976745	0.0005789	79	9.9984817	0.0014112
41	9.9976997	0.0006040	80	9.9984909	0.0014204

Let ϕ' and ρ be the geocentric latitude and radius of the place, ϕ being the geographical latitude, then :—

$$\begin{aligned}\rho \sin \phi' &= X \sin \phi. \\ \rho \cos \phi' &= Y \cos \phi.\end{aligned}$$

No	Leg. p.	Authority for Longitude.	Authority for Latitude.
1	9-999524	Communicated by Director, 1922.	Communicated by Director, 1922.
2	9-999331	<i>Astronomical Journal</i> , No. 334.	<i>Astronomical Journal</i> , No. 334.
3	9-999478	Albrecht's <i>Compensation</i> .	Triangulation by Trépiéd.
4	9-999387	U.S. Coast and Geodetic Survey.	Zenith Telescope Observations
5	9-999339	Communicated by Prof. Todd.	Communicated by Prof. Todd.
6	9-999341	Publications of Obs., Vol. I., 1915.	Publications of Obs., Vol. I., 1915.
7	9-999885	<i>Harvard Annals</i> , 1903.	<i>Harvard Annals</i> , 1903.
8	9-999236	Armagh Catalogue of Stars, 1840.	Armagh Catalogue of Stars, 1840.
9	9-999449	Determination by Hartl.	<i>Annals</i> , Vol. VI., 1912.
10	9-999147	Albrecht's <i>Compensation</i> .	Communicated by Dr. Hartwig.
11	9-999284	Communicated July 1, 1925.	Communicated July 1, 1925.
12	9-999281	" "	" "
13	9-999282	" "	" "
14	9-999281	" "	" "
15	9-999214	Telegraphic connection with Paris.	Meridian Observations.
16	9-999567	Ordnance Survey.	Ordnance Survey.
17	9-999284	Albrecht's <i>Compensation</i> .	Determination by Respighi.
18	9-999848	Geodetic Branch, Survey of India.	Geodetic Branch, Survey of India.
19			
20	9-999127	Albrecht's <i>Compensation</i> .	Communicated by Prof. Küstner.
21	9-999275	Telegraphic connection with Paris.	Zenith Distances of Fundamental Stars.
22	9-999116	Albrecht's <i>Compensation</i> .	Geodätisches Institut of Berlin.
23	9-999691	Communicated by Director, 1922.	Communicated by Director, 1922.
24	9-999124	<i>Annuaire Astronomique</i> , 1919.	<i>Annuaire Astronomique</i> , 1919.
25	9-999208	Berliner Jahrbuch.	Berliner Jahrbuch.
26	9-999599	Cambridge Observations.	Cambridge Observations.
27	9-999338	U.S. Coast and Geodetic Survey.	<i>Annals of the Observatory</i> , Vol. XVII.
28	9-999547	<i>Annals of Cape Observatory</i> , Vol. I., part 2.	Cape General Catalogue of Stars, 1885.
29	9-999161	Determination by Zona and Ricco.	Determination by Zona.
30	9-999144	Communicated by Prof. Lewitzky.	Communicated by Prof. Lewitzky.
31	9-999448	<i>Publications of Observatory</i> , Vol. I., part 1.	<i>Publications of Observatory</i> , Vol. I., part 1.
32	9-999420	U.S. Coast and Geodetic Survey.	U.S. Coast and Geodetic Survey.
33	9-999361	Communicated by Prof. Howe.	Communicated by Prof. Howe.
34	9-999321	The American Ephemeris.	The American Ephemeris.
35	9-999394	Ephemerides Astron. de Coimbra, 1889.	Ephemerides Astron. de Coimbra, 1889.
36	9-999979	Survey Department, Ceylon.	Survey Department, Ceylon.
37	9-999004	Albrecht's <i>Compensation</i> .	Communicated by Prof. Strömgren.
38	9-999605	Observatory and U.S. Naval Expedition.	Meridian Observations of Circumpolar Stars.
39	9-999143	Albrecht's <i>Compensation</i> .	Austrian Gradmessungs-Commission.
40	9-999629	Geodetic Branch, Survey of India.	Geodetic Branch, Survey of India.
41			
42	9-998941	Albrecht's <i>Compensation</i> .	Determination by Schwarz.
43	9-999060	<i>Transactions Royal Irish Academy</i> , 1838.	<i>Transactions Royal Dublin Society</i> , Vol. IV.
44	9-999026	Transport of Chronometers.	Meridian Observations of Circumpolar Stars.
45	9-999114	<i>Astron. Nachrichten</i> , No. 643.	<i>Astron. Nachrichten</i> , No. 643.

OBSERVATORIES.

No.	Place and Altitude.	Longitude.	Latitude.	Reduction to Geocentric Latitude.
46	EDINBURGH (Blackford Hill), 441 ft. ..	00 12 44.2 W.	55 55 30.0 N.	-10 40.5
47	EVANSTON, Ill., Dearborn Obs., 574 ft.	05 50 42.3 W.	42 03 33.4 N.	-11 31.8
48	FLAGSTAFF, ARIZONA (Mr. Lowell),	07 26 44.58 W.	35 12 30.5 N.	-10 54.7
49	FLORENCE, Arcetri, 604 ft. [7250 ft.	00 45 01.30 E.	43 45 14.6 N.	-11 34.9
50	GENEVA, 1335 ft.	00 24 36.61 E.	46 11 59.3 N.	-11 35.2
51	GEORGETOWN COLL., D.C., U.S.A., 151 ft.	05 08 18.24 W.	38 54 26.0 N.	-11 19.5
52	GLASGOW, 180 ft.	00 17 10.55 W.	55 52 42.1 N.	-10 46.9
53	GLASGOW, U.S.A., Morrison Obs., 748 ft.	06 11 18.08 W.	39 13 45.6 N.	-11 21.1
54	GOHA, 1083 ft.	00 42 50.44 E.	50 56 37.9 N.	-11 21.1
55	GOTTINGEN, 532 ft.	00 39 46.22 E.	51 31 48.2 N.	-11 18.2
56	GREENWICH, 154 ft.	00 00 00	51 28 38.2 N.	-11 18.5
57	HAMBURG (BerGEDorf), 131 ft. ..	00 40 57.74 E.	53 28 46.7 N.	-11 06.1
58	HAVLRFORD COLLEGE, Pa.	05 01 12.70 W.	40 00 40.1 N.	-11 24.7
59	HEIDELBERG, 1870 ft.	00 34 53.13 E.	49 23 54.9 N.	-11 27.8
60	HELSINGFORS, 125 ft.	01 39 49.10 E.	60 09 42.3 N.	-10 01.5
61	HELWAN, 390 ft.	02 05 22 E.	29 51 33 N.	-09 59.7
62	HONG KONG, 112 ft.	07 36 41.86 E.	22 18 13.2 N.	-08 07.4
63	HYDERABAD, Nizamiah Obs., 1818 ft.	05 13 48.98 E.	17 25 54.3 N.	-06 36.6
64	JAMAICA, KEMPSHOT (Miss C. Maxwell	05 11 29.48 W.	18 24 51 N.	-06 55.9
65	JLNA, 512 ft. [Hall)	00 46 21.25 E.	50 55 34.9 N.	-11 21.3
66	JOHANNLSBURG, Union Obs., 5924 ft. ..	01 52 18.0 E.	26 10 55.2 S.	+09 09.8
67	KASAN, Engelhardt Observatory, 322 ft.	03 15 16.5 E.	55 50 20.0 N.	-10 47.3
68	KASAN, University Observatory, 259 ft.	03 16 29.01 E.	55 47 24.3 N.	-10 47.7
69	KEW, 33 ft.	00 01 15.1 W.	51 28 06 N.	-11 18.5
70	KIEL, 154 ft.	00 40 35.57 E.	54 20 28.5 N.	-10 59.7
71	KIEW, 587 ft.	02 02 00.56 E.	50 27 11.8 N.	-11 23.5
72	KODAIKANAL, 7688 ft.	05 09 52.0 E.	10 13 50 N.	-04 02.3
73	KÖNIGSBERG, 72 ft.	01 21 58.97 E.	54 42 50.4 N.	-10 56.8
74	KREMSMÜNSTER, 1260 ft.	00 56 31.58 E.	48 03 23.1 N.	-11 31.9
75	LA PLATA, 52 ft.	03 51 44.8 W.	34 54 30.5 S.	+10 52.2
76	LIPZIG, 390 ft.	00 49 33.93 E.	51 20 05.9 N.	-11 19.2
77	LLYDEN, 20 ft.	00 17 56.15 E.	52 09 20.0 N.	-11 14.6
78	LISBON, Tapada, 308 ft. .. [200 ft	00 36 44.68 W.	38 42 30.5 N.	-11 18.5
79	LIVERPOOL (BIDSTON, BIRKENHEAD).	00 12 17.33 W.	53 24 04.8 N.	-11 06.6
80	LORENZO MARQUES, Campos [Roderigues Obs., 195 ft.	02 10 22.63 E.	25 58 65.5 S.	+09 06.6
81	LUND, 112 ft.	00 52 44.97 E.	55 41 51.6 N.	-10 48.5
82	LYONS, 981 ft.	00 19 08.52 E.	45 41 40.9 N.	-11 35.5
83	MADISON, Wis., Washburn Obs., 961 ft.	05 57 37.90 W.	43 04 36.7 N.	-11 33.9
84	MADRAS, 23 ft. A.	05 20 59.14 E.	13 04 08.0 N.	-05 05.5
	" " " " " " G.	05 20 59.62 E.	13 04 03.1 N.	
85	MADRID, 2149 ft.	00 14 45.09 W.	40 24 30.0 N.	-11 26.4

No.	Log. p.	Authority for Longitude.	Authority for Latitude.
46	9.998999	Communicated by Prof. Copeland.	<i>M.N.R.A.S.</i> , January 1907.
47	9.999347	Standard Time comparison by Telegraph.	Meridian Observations.
48	9.999517	Communicated by Mr. P. Lowell.	Communicated by Mr. P. Lowell.
49	9.999505	Albrecht's <i>Compensation</i> .	Commissione Italiana, Milan, 1886.
50	9.999241	Albrecht's <i>Compensation</i> .	Determination by Pidoux.
51	9.999426	<i>Annals of Observatory</i> , No. 1.	The Photochronograph and its applications, 1894.
52	9.998999	<i>M.N.R.A.S.</i> , December 1865.	<i>M.N.R.A.S.</i> , October 1917.
53	9.999418	The American Ephemeris.	The American Ephemeris.
54	9.999121	Albrecht's <i>Compensation</i> .	Communicated by Prof. Harzer.
55	9.999106	Albrecht's <i>Compensation</i> .	Communicated by Prof. Schur.
56	9.999107		Greenwich Observations.
57	9.999057	Albrecht's <i>Compensation</i> .	Observations by Talcott's Method, 1909.
58	9.999398	Communicated by Prof. Collins.	Determination by Sharpless.
59	9.999159	Determination by Becker and Valentiner.	Determination by Becker and Valentiner.
60	9.998901	Albrecht's <i>Compensation</i> .	Determination by Donner.
61	9.999640	Communicated by Mr. Keeling.	Communicated by Mr. Keeling.
62	9.999791	Determination by Green, U.S.N.	Determination by Doberck.
63	9.999870	Communicated by Director, 1916.	Communicated by Director, 1916.
64	9.999855	Report on Transit of Venus, 1882.	Report on Transit of Venus, 1882.
65	9.999122	Preussische Landesaufnahme, 1900.	Meridian Observations.
66	9.999717	Observatory Circular, 1916.	Observatory Circular, 1916.
67	9.999001	Communicated by Prof. Dubiago.	Communicated by Prof. Dubiago.
68	9.999001	Bakhuyzen's <i>Compensation</i> .	Observations by Talcott's Method.
69	9.999107	Determination by Balfour Stewart	Determination by Balfour Stewart.
70	9.999037	Albrecht's <i>Compensation</i> .	Geodätisches Institut of Berlin.
71	9.999133	Albrecht's <i>Compensation</i> .	<i>Annales de l'Observatoire</i> , Tome III.
72	9.999954	Communicated by Director, 1912.	Communicated by Director, 1912.
73	9.999026	Albrecht's <i>Compensation</i> .	<i>Astron. Beobachtungen</i> , Band 38.
74	9.999194	Albrecht's <i>Compensation</i> .	Determination by Tinter.
75	9.999524	Publications of Obs., Vol. V., 1919.	Publications of Obs., Vol. V., 1919.
76	9.999111	Albrecht's <i>Compensation</i> .	Observations with Universal Instrument
77	9.999090	Albrecht's <i>Compensation</i> .	<i>Annalen der Sternwarte</i> , Band II
78	9.999431	Determination by Greer, U.S.N.	Communicated by Director, July 1911
79	9.999059	<i>M.N.R.A.S.</i> , November 1894.	<i>M.N.R.A.S.</i> , November 1894.
80	9.999721	Publications of Obs., Vol. II., 1911.	Publications of Obs., Vol. IV., 1912.
81	9.999004	Albrecht's <i>Compensation</i> .	Determination by Engstrom.
82	9.999254	Bakhuyzen's <i>Compensation</i> .	<i>Bulletin Astronomique</i> , Tome XI.
83	9.999320	Communicated by Prof. Comstock.	<i>Publications of Observatory</i> , Vol. VI.
84	9.999926	Geodetic Branch, Survey of India.	Geodetic Branch, Survey of India.
85	9.999389	<i>Anuario</i> , 1916.	<i>Anuario</i> , 1916.

OBSERVATORIES.

	Place and Altitude.	Longitude.	Latitude.	Reduction to Geocentric Latitude.
		^h ^m ^s	[°] ['] ["]	
86	METZBILLS, 240 ft.	00 21 34.55 E.	43 18 17.5 N.	-11 34.3
87	MAURITIUS, Royal Alfred Obs., 177 ft.	03 50 12.6 E.	20 05 39 S.	+07 27.8
88	MILBURN, 02 ft.	09 39 54.20 E.	37 49 53.4 S.	+11 13.4
89	MILAN, Brera 394 ft.	00 36 45.88 E.	45 27 59.2 N.	-11 35.6
90	MONTREAL, Obs. Inst. Meteorológico, 179 ft.	03 44 51.4 W.	34 54 33 S.	+10 52.2
91	MONTREAL, McGill College, 187 ft. . .	04 54 18.88 W.	45 30 19.1 N.	-11 35.6
92	MOSCOW, 466 ft.	02 30 17.03 E.	55 45 19.5 N.	-10 48.0
93	MOUNT HAMILTON, Lick Obs., 4209 ft.	08 06 34.89 W.	37 20 25.6 N.	-11 10.4
94	MOUNT WILSON Obs., 5900 ft.	07 52 14.33 W.	34 12 59.5 N.	-10 46.2
95	MUNICH, Bogenhausen, 1736 ft.	00 46 26.02 E.	48 08 45.5 N.	-11 31.7
96	NAPLES, Capo di Monte, 538 ft.	00 57 01.70 E.	40 51 46.3 N.	-11 28.1
97	NEUCHÂTEL, 1601 ft.	00 27 49.90 E.	46 59 50.6 N.	-11 34.1
98	NEW HAVEN, Yale University, 131 ft.	04 51 40.58 W.	41 19 22.3 N.	-11 29.7
99	NEW YORK, Columbia University . . .	04 55 53.64 W.	40 45 23.1 N.	-11 27.7
100	NICE 1240 ft.	00 29 12.15 E.	43 43 16.9 N.	-11 34.9
101	NICOMEDIE, 180 ft.	02 07 53.78 E.	46 58 22.1 N.	-11 34.2
102	NORTHFIELD Carleton College, 938 ft.	06 12 35.81 W.	44 27 41.6 N.	-11 35.5
103	ODESSA 180 ft.	02 03 02.04 E.	46 28 36.7 N.	-11 34.9
104	OSLO, University Obs., 82 ft.	00 42 53.50 E.	59 54 44.0 N.	-10 04.5
105	OTTAWA, 276 ft.	05 02 51.98 W.	45 23 39.1 N.	-11 35.6
106	OXFORD Radcliffe Observatory, 213 ft.	00 05 02.6 W.	51 45 35.6 N.	-11 16.9
107	OXFORD University Observatory, 210 ft.	00 05 00.4 W.	51 45 34.2 N.	-11 16.9
108	LAOBA 102 ft.	00 47 29.15 E.	45 24 01.0 N.	-11 35.6
109	PAISLEY, Gault Observatory, 107 ft. . .	00 17 43.3 W.	55 50 43.8 N.	-10 47.2
110	PALERMO 240 ft.	00 53 25.87 E.	38 06 44.5 N.	-11 15.1
111	PARIS, 194 ft.	00 09 20.93 E.	48 50 11.2 N.	-11 29.7
112	PERKIN, Central Observatory	07 45 52.87 E.	39 54 23.0 N.	-11 24.3
113	PERTH, Western Australia, 197 ft. . .	07 43 21.74 E.	31 57 07.4 S.	+10 23.8
114	PETROGRAD Academy of Sciences, 10 ft.	02 01 13.40 E.	59 56 29.7 N.	-10 04.2
115	POLA, 105 ft.	00 55 23.07 E.	44 51 48.7 N.	-11 35.7
116	POSDAM, 318 ft.	00 52 15.86 E.	52 22 56.0 N.	-11 13.3
117	PRAGUE, 646 ft.	00 57 40.28 E.	50 05 15.8 N.	-11 25.1
118	PRINCETON, New Jersey, 213 ft. . . .	04 58 37.61 W.	40 20 57.8 N.	-11 26.2
119	PUŁKOWA, 246 ft.	02 01 18.57 E.	59 46 18.7 N.	-10 06.2
120	QUEPPE (Time Ball on Cavalier Building)	04 44 49.38 W.	46 48 31.2 N.	-11 34.4
121	RIO DE JANEIRO, 109 ft.	02 52 53.5 W.	22 53 41 S.	+08 17.5
122	ROMA, Capitol, 207 ft.	00 49 56.34 E.	41 53 33.6 N.	-11 31.3
123	ROME, Roman College, 194 ft.	00 49 55.36 E.	41 53 53.6 N.	-11 31.3
124	ROME, Vatican	00 49 49.28 E.	41 54 04.8 N.	-11 31.3
125	RUGBY, Temple Obs., 384 ft.	00 05 02.0 W.	52 22 07 N.	-11 13.4

No.	Log. p.	Authority for Longitude	Authority for Latitude.
86	9.999315	Albrecht's <i>Compensation</i> .	Meridian Observations.
87	9.999829	Communicated by Mr. Meldrum.	Communicated by Mr. Meldrum.
88	9.999452	Communicated by Director, 1922.	Communicated by Director, 1922.
89	9.999260	Albrecht's <i>Compensation</i> .	<i>Publications</i> , No. 51, 1914.
90	9.999524	Communicated by Director, 1919.	Communicated by Director, 1919.
91	9.999259	U.S. Coast and Geodetic Survey.	U.S. Coast and Geodetic Survey.
92	9.999003	Albrecht's <i>Compensation</i> .	Determination by Sternberg.
93	9.999465	U.S. Coast and Geodetic Survey.	Determination by Tucker.
94	9.999540	<i>Contributions from Solar Observatory</i> , No. 9.	<i>Contributions from Solar Observatory</i> , No. 9.
95	9.999192	Albrecht's <i>Compensation</i> .	Communicated by Prof. Seeliger.
96	9.999377	Bakhuyzen's <i>Compensation</i> .	Determination by Vergola.
97	9.999220	Bakhuyzen's <i>Compensation</i> .	Berliner Jahrbuch.
98	9.999366	The American Ephemeris.	The American Ephemeris.
99	9.999380	Triangulation from Rutherford's Observatory	Triangulation from Rutherford's Observatory.
100	9.999304	Albrecht's <i>Compensation</i> .	<i>Annales de l'Observatoire</i> , Tome II.
101	9.999221	Bakhuyzen's <i>Compensation</i> .	Communicated by Prof. Kortazzi.
102	9.999285	Telegraphic connection with Washington.	<i>Publications of Observatory</i> , No. 1.
103	9.999234	Albrecht's <i>Compensation</i> .	Observations in the Prime Vertical.
104	9.998906	Albrecht's <i>Compensation</i> . A.N. 3993.	<i>Astron. Nachrichten</i> , No. 3193.
105	9.999261	Communicated by Director, 1919.	Communicated by Director, 1919.
106	9.999100	Radcliffe Observations, 1842.	Radcliffe Catalogue of Stars, 1900.
107	9.999100	Ordnance Survey.	Ordnance Survey.
108	9.999261	Albrecht's <i>Compensation</i> .	Determination by Ciscato.
109	9.998999	Communicated by Observatory Committee.	Communicated by Observatory Committee.
110	9.999446	Bakhuyzen's <i>Compensation</i> .	Determination by Zona.
111	9.999174	Albrecht's <i>Compensation</i> .	Determination by Laugier.
112	9.999401	Communicated by Director, 1920.	Communicated by Director, 1920.
113	9.999593	Government Lands and Survey Office, Perth	Communicated by Mr. W. E. Cooke.
114	9.998906	Triangulation from Pulkowa.	Triangulation from Pulkowa.
115	9.999275	Austrian Gradmessungs-Commission	Austrian Gradmessungs-Commission.
116	9.999084	Albrecht's <i>Compensation</i> .	<i>Publications of Observatory</i> , Vol. VI.
117	9.999142	Albrecht's <i>Compensation</i> .	<i>Astron. Beobachtungen</i> , 1888-1891.
118	9.999390	The American Ephemeris.	The American Ephemeris.
119	9.998909	Albrecht's <i>Compensation</i> .	<i>Description de l'Observatoire</i> .
120	9.999225	Communicated by Hydrographer, Ottawa, 1919.	Communicated by Hydrographer, Ottawa, 1919.
121	9.999780	Communicated by Director, 1922	Communicated by Director, 1922.
122	9.999350	Albrecht's <i>Compensation</i> .	Determination by Respighi.
123	9.999350	Albrecht's <i>Compensation</i> .	Determination by Millosevich.
124	9.999350	Albrecht's <i>Compensation</i> .	Communicated by Sig. Denza.
125	9.999084	Ordnance Survey.	Ordnance Survey.

OBSERVATORIES.

	Place and Altitude.	Longitude.	Latitude	Reduction to Geocentric Latitude.
		^h ^m ^s	[°] ['] ["]	['] ["]
126	SAN FERNANDO, near CADIZ, 101 ft. . .	00 24 49.30 W.	36 27 42.0 N.	-11 04.7
127	SANTIAGO DE CHILE, 1704 ft. . . [560 ft.	04 42 46.3 W.	33 26 42.0 S.	+10 39.0
128	SIDMOUTH, DEVON, Norman Lockyer Obs.	00 12 52.5 W.	50 41 13.3 N.	-11 22.4
129	SOUTH KENSINGTON, London, S.W. . .	00 00 41.54 W.	51 29 48.0 N.	-11 18.4
130	STOKE NEWINGTON, 144 ft.	01 12 13.97 E.	59 20 32.7 N.	-10 11.3
131	STONYHURST, 381 ft.	00 09 52.68 W.	53 50 40 N.	-11 03.5
132	STRASBURG, 472 ft.	00 31 04.52 E.	48 35 00.3 N.	-11 30.5
133	SUTTON SURREY (Mr. Doberck), 167 ft.	00 00 44.53 W.	51 22 19.8 N.	-11 19.0
134	SYDNEY, 144 ft.	10 04 49.54 E.	33 51 41.1 S.	+10 42.9
135	TACUBAYA MEXICO, 7619 ft.	06 36 46.67 W.	19 24 17.9 N.	-07 14.9
136	TASCHKENT 1499 ft.	04 37 10.82 E.	41 19 31.4 N.	-11 29.7
137	TOKYO	09 18 58.02 E.	35 39 17.5 N.	-10 58.3
138	TORONTO 350 ft.	05 17 34.65 W.	43 39 35.9 N.	-11 34.8
139	TOULOUSE, 630 ft.	00 05 51.23 E.	43 36 44.0 N.	-11 34.7
140	TRIESTE, 220 ft.	00 55 05.4 E.	45 38 35.5 N.	-11 35.5
	[197 ft			
141	TRIVANDRUM Maharaja's Observatory.	05 07 59 E.	8 30 32 N.	-03 22.9
142	FULST HILL, London (Sir W. Huggins).	00 00 27.7 W.	51 26 47 N.	-11 18.6
143	TURIN PIAZZA Fiumana, 2028 ft. [174 ft.	00 31 05.95 E.	45 02 16.3 N.	-11 35.7
144	UPPER MERIDIAN,	01 10 30.12 E.	59 51 29.4 N.	-10 05.2
145	URBANA, University of Illinois, 774 ft	05 52 53.93 W.	40 06 20.2 N.	-11 25.2
146	URICH, 30 ft [730 ft	00 20 30.97 E.	52 05 09.5 N.	-11 15.1
147	VICTORIA, B.C., Astrophysical Obs.	08 13 40.17 W.	48 31 15.7 N.	-11 30.7
148	VENICE, Istituto di Marina 49 ft . .	00 40 22.12 E.	45 26 10.5 N.	-11 35.6
149	VILNA Imperial Observatory, 787 ft.	01 05 21.35 E.	48 13 55.4 N.	-11 31.5
150	VILNA, Ottakring (Herr Kuffner), [935 ft.	01 05 10.96 E.	48 12 46.7 N.	-11 31.6
151	WARSAW, 301 ft. [269 ft.	01 24 07.25 E.	52 13 04.6 N.	-11 14.3
152	WASHINGTON, Georgetown Heights,	05 08 15.78 W.	38 55 14.0 N.	-11 19.6
153	WELLINGTON, N.Z., Dominion Obs., 416 ft.	11 39 04.27 E.	41 17 03.8 S.	+11 29.5
154	WILHELMSHAVEN 30 ft. [1099 ft	00 32 35.06 E.	53 31 52.2 N.	-11 04.7
155	WILLIAMS BAY, Wis., Yerkes Obs.,	05 54 13.24 W.	42 34 12.6 N.	-11 33.0
156	WINDSOR, N.S.W. (Mr. Tebbutt), 52 ft.	10 03 20.51 E.	33 36 30.8 S.	+10 40.6
157	ZURICH 1536 ft	00 34 12.26 E.	47 22 38.3 N.	-11 33.5

NOTE.—

ALBRECHT'S Compensation. The reference is to Prof. Albrecht's paper in *Astron. Nachrichten*, No. 3603.BAKHUYZEN'S Compensation. The reference is to Prof. Bakhuyzen's paper in *Astron. Nachrichten*, No. 4202, the adopted difference of longitude Paris—Greenwich being 0^m 20^s 93.

No.	Log. p.	Authority for Longitude.	Authority for Latitude.
126	9.999486	Telegraphic connection with Madrid.	Transit-Circle Observations.
127	9.999558	Anuario del Observatorio, 1919.	Anuario del Observatorio, 1919.
128	9.999127	Ordnance Survey.	Ordnance Survey.
129	9.999107	Communicated by Sir J. Norman Lockyer.	Communicated by Sir J. Norman Lockyer.
130	9.998919	Communicated by Director, 1913.	Communicated by Director, 1917.
131	9.999049	Chronometrical connection with Liverpool.	Meridian Observations.
132	9.999180	Albrecht's <i>Compensation</i> .	Meridian Observations of Circumpolar Stars.
133	9.999110	Ordnance Survey.	Ordnance Survey.
134	9.999549	Tel. Determination by Ellery, Russell and Todd.	Sydney Astronomical Observations.
135	9.999840	Boletin del Observatorio, No. 4, 1914.	Boletin del Observatorio, No. 4, 1914.
136	9.999366	Communicated by Prof. Gedeonof.	Communicated by Prof. Gedeonof.
137	9.999506	University Calendar, 1892.	University Calendar, 1892.
138	9.999306	Determination by Carpmacel.	Determination by Blake.
139	9.999307	Communicated by M. Cosserat.	Determination by Petit.
140	9.999255	Communicated by Director, 1919.	Communicated by Director, 1919.
141	9.999968	Communicated by Director, 1915.	Communicated by Director, 1915.
142	9.999108	Ordnance Survey.	Ordnance Survey.
143	9.999270	<i>Annuario Astronomico</i> , 1917.	<i>Annuario Astronomico</i> , 1917.
144	9.998908	Albrecht's <i>Compensation</i> .	<i>Astron. Nachrichten</i> , No. 2565.
145	9.999396	Communicated by Prof. Joel Stebbins.	Communicated by Prof. Joel Stebbins.
146	9.999092	Triangulation from Leyden.	<i>Astron. Nachrichten</i> , No. 2411.
147	9.999182	Communicated by Director, 1920.	Communicated by Director, 1920.
148	9.999260	Determination by Millosevich.	Determination by Millosevich.
149	9.999189	Albrecht's <i>Compensation</i> .	K. K. Gradmessungs-Bureau.
150	9.999190	Albrecht's <i>Compensation</i> .	<i>Publicationen der Sternwarte</i> , I. und II.
151	9.999089	Albrecht's <i>Compensation</i> .	<i>Astron. Nachrichten</i> , No. 4666 (July 1913).
152	9.999426	U.S. Coast and Geodetic Survey.	American Ephemeris, 1922. [1915.
153	9.999366	Dominion Observatory Bulletin,	Dominion Observatory Bulletin,
154	9.999057	Albrecht's <i>Compensation</i> . [1915.	Zenith Distances of Zenithal Stars.
155	9.999333	Observatory Bulletin, No. 18.	Observatory Bulletin, No. 18.
156	9.999555	Report of Windsor Observatory, 1888.	Observations in the Prime Vertical.
157	9.999211	Bakhuyzen's <i>Compensation</i> .	Communicated by Prof. A. Wolfer.

Directors are requested to notify H.M. *Nautical Almanac* Office if they desire any change made in the information given above concerning their Observatories.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.		c°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.														
Jan.	1	06 00 06	17 06	35 06	56 07	08 07	22 07	39 07	59 08	08 08	20 08	32 08	46 09	03
	2	06 00 06	17 06	35 06	56 07	08 07	22 07	39 07	59 08	08 08	19 08	32 08	46 09	03
	3	06 00 06	17 06	35 06	56 07	08 07	22 07	39 07	59 08	08 08	19 08	31 08	46 09	02
	4	06 01 06	18 06	36 06	57 07	09 07	22 07	39 07	59 08	08 08	19 08	31 08	45 09	02
	5	06 01 06	18 06	36 06	57 07	09 07	22 07	38 07	58 08	08 08	19 08	31 08	45 09	01
	6	06 02 06	18 06	36 06	57 07	09 07	22 07	38 07	58 08	08 08	18 08	30 08	44 09	00
	7	06 02 06	19 06	37 06	57 07	09 07	22 07	38 07	58 08	07 08	18 08	30 08	43 08	59
	8	06 03 06	19 06	37 06	57 07	09 07	22 07	38 07	58 08	07 08	17 08	29 08	43 08	58
	9	06 03 06	20 06	37 06	57 07	09 07	22 07	38 07	57 08	06 08	17 08	28 08	42 08	57
	10	06 03 06	20 06	37 06	57 07	09 07	22 07	38 07	57 08	06 08	16 08	28 08	41 08	56
	11	06 04 06	20 06	37 06	57 07	09 07	22 07	37 07	56 08	05 08	15 08	27 08	40 08	55
	12	06 04 06	20 06	38 06	57 07	09 07	22 07	37 07	56 08	05 08	15 08	26 08	39 08	54
	13	06 05 06	21 06	38 06	57 07	09 07	21 07	37 07	55 08	04 08	14 08	25 08	38 08	53
	14	06 05 06	21 06	38 06	57 07	08 07	21 07	36 07	55 08	03 08	13 08	24 08	37 08	51
	15	06 05 06	21 06	38 06	58 07	08 07	21 07	36 07	54 08	03 08	12 08	23 08	35 08	50
	16	06 06 06	21 06	38 06	57 07	08 07	20 07	35 07	53 08	02 08	11 08	22 08	34 08	49
	17	06 06 06	22 06	38 06	57 07	08 07	20 07	35 07	52 08	01 08	10 08	21 08	33 08	47
	18	06 07 06	22 06	38 06	57 07	07 07	20 07	34 07	52 08	00 08	09 08	20 08	31 08	45
	19	06 07 06	22 06	38 06	56 07	07 07	19 07	33 07	51 07	59 08	08 08	18 08	30 08	44
	20	06 07 06	22 06	38 06	56 07	07 07	19 07	33 07	50 07	58 08	07 08	17 08	29 08	42
	21	06 08 06	22 06	38 06	56 07	06 07	18 07	32 07	49 07	57 08	06 08	15 08	27 08	40
	22	06 08 06	22 06	38 06	56 07	06 07	17 07	31 07	48 07	56 08	04 08	14 08	25 08	38
	23	06 08 06	23 06	38 06	55 07	05 07	17 07	30 07	47 07	55 08	03 08	13 08	24 08	36
	24	06 08 06	23 06	38 06	55 07	05 07	16 07	30 07	46 07	53 08	02 08	11 08	22 08	34
	25	06 09 06	23 06	38 06	55 07	04 07	16 07	29 07	45 07	52 08	00 08	10 08	20 08	32
	26	06 09 06	23 06	37 06	54 07	04 07	15 07	28 07	43 07	51 07	59 08	08 08	19 08	30
	27	06 09 06	23 06	37 06	54 07	03 07	14 07	27 07	42 07	49 07	57 08	06 08	17 08	28
	28	06 09 06	23 06	37 06	53 07	03 07	13 07	26 07	41 07	48 07	56 08	05 08	15 08	26
	29	06 09 06	23 06	37 06	53 07	02 07	13 07	25 07	40 07	47 07	54 08	03 08	13 08	24
	30	06 10 06	23 06	37 06	52 07	01 07	12 07	24 07	38 07	45 07	53 08	01 08	11 08	22
Feb.	31	06 10 06	23 06	37 06	52 07	01 07	11 07	23 07	37 07	44 07	51 07	59 08	09 08	20
	1	06 10 06	23 06	36 06	51 07	00 07	10 07	22 07	36 07	42 07	50 07	58 08	07 08	17
	2	06 10 06	23 06	36 06	51 06	59 07	09 07	21 07	34 07	41 07	48 07	56 08	05 08	15
	3	06 10 06	22 06	35 06	50 06	57 07	08 07	19 07	33 07	39 07	46 07	54 08	03 08	13
	4	06 10 06	22 06	35 06	50 06	58 07	07 07	18 07	32 07	38 07	44 07	52 08	01 08	10
	5	06 10 06	22 06	35 06	49 06	57 07	06 07	17 07	30 07	36 07	42 07	50 07	58 08	08
	6	06 10 06	22 06	34 06	48 06	56 07	05 07	16 07	28 07	34 07	41 07	48 07	56 08	05
	7	06 11 06	22 06	34 06	47 06	55 07	04 07	14 07	27 07	33 07	39 07	46 07	54 08	03

BEGINNING OF MORNING TWILIGHT.

		h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m
Jan.	1	04	44	05	01	05	16	05	30	05	37	05	45	05	52	06	00	06	03
	11	04	50	05	05	05	20	05	33	05	39	05	46	05	52	05	59	06	02
	21	04	54	05	08	05	21	05	32	05	38	05	43	05	49	05	54	05	56
	31	04	58	05	10	05	20	05	30	05	34	05	38	05	42	05	45	05	47
Feb.	10	05	00	05	10	05	18	05	24	05	27	05	29	05	31	05	32	05	33

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

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LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.		0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.														
Jan.	1	18 07	17 50	17 32	17 11	16 59	16 45	16 28	16 08	15 58	15 47	15 35	15 21	15 04
	2	18 07	17 50	17 32	17 11	16 59	16 45	16 29	16 09	15 59	15 48	15 36	15 22	15 05
	3	18 08	17 51	17 33	17 12	17 00	16 46	16 30	16 10	16 00	15 49	15 37	15 23	15 06
	4	18 08	17 51	17 34	17 13	17 01	16 47	16 31	16 11	16 01	15 51	15 39	15 25	15 08
	5	18 09	17 52	17 34	17 14	17 02	16 48	16 32	16 12	16 03	15 52	15 40	15 26	15 10
	6	18 09	17 53	17 35	17 14	17 02	16 49	16 33	16 13	16 04	15 53	15 41	15 28	15 11
	7	18 10	17 53	17 35	17 15	17 03	16 50	16 34	16 14	16 05	15 54	15 42	15 29	15 13
	8	18 10	17 54	17 36	17 16	17 04	16 51	16 35	16 16	16 06	15 56	15 44	15 31	15 15
	9	18 11	17 54	17 37	17 17	17 05	16 52	16 36	16 17	16 08	15 57	15 46	15 32	15 17
	10	18 11	17 55	17 37	17 17	17 06	16 53	16 37	16 18	16 09	15 59	15 47	15 34	15 19
	11	18 11	17 55	17 38	17 18	17 07	16 54	16 38	16 19	16 10	16 00	15 49	15 36	15 21
	12	18 12	17 56	17 39	17 19	17 08	16 55	16 39	16 21	16 12	16 02	15 51	15 38	15 23
	13	18 12	17 56	17 39	17 20	17 09	16 56	16 41	16 22	16 13	16 04	15 52	15 40	15 25
	14	18 12	17 57	17 40	17 21	17 10	16 57	16 42	16 24	16 15	16 05	15 54	15 42	15 27
	15	18 13	17 57	17 41	17 22	17 11	16 58	16 43	16 25	16 16	16 07	15 56	15 44	15 29
	16	18 13	17 58	17 41	17 22	17 11	16 59	16 44	16 26	16 18	16 08	15 58	15 46	15 31
	17	18 14	17 58	17 42	17 23	17 12	17 00	16 46	16 28	16 19	16 10	16 00	15 48	15 34
	18	18 14	17 59	17 43	17 24	17 13	17 01	16 47	16 29	16 21	16 12	16 02	15 50	15 36
	19	18 14	17 59	17 43	17 25	17 14	17 02	16 48	16 31	16 23	16 14	16 03	15 52	15 38
	20	18 14	18 00	17 44	17 26	17 15	17 04	16 50	16 33	16 24	16 16	16 05	15 54	15 41
	21	18 15	18 00	17 45	17 27	17 16	17 05	16 51	16 34	16 26	16 17	16 07	15 56	15 43
	22	18 15	18 00	17 45	17 28	17 17	17 06	16 52	16 36	16 28	16 19	16 09	15 58	15 46
	23	18 15	18 01	17 46	17 28	17 18	17 07	16 54	16 37	16 29	16 21	16 11	16 01	15 48
	24	18 16	18 01	17 46	17 29	17 19	17 08	16 55	16 39	16 31	16 23	16 14	16 03	15 51
	25	18 16	18 02	17 47	17 30	17 20	17 09	16 56	16 40	16 33	16 25	16 16	16 05	15 53
	26	18 16	18 02	17 48	17 31	17 22	17 11	16 58	16 42	16 35	16 27	16 18	16 07	15 56
	27	18 16	18 03	17 48	17 32	17 23	17 12	16 59	16 44	16 37	16 29	16 20	16 10	15 58
	28	18 17	18 03	17 49	17 33	17 24	17 13	17 01	16 45	16 38	16 31	16 22	16 12	16 01
	29	18 17	18 04	17 50	17 34	17 25	17 14	17 02	16 47	16 40	16 33	16 24	16 14	16 03
	30	18 17	18 04	17 50	17 35	17 26	17 15	17 03	16 49	16 42	16 35	16 26	16 17	16 06
	31	18 17	18 04	17 51	17 35	17 27	17 16	17 05	16 50	16 44	16 37	16 28	16 19	16 08
Feb.	1	18 17	18 05	17 51	17 36	17 28	17 18	17 06	16 52	16 46	16 39	16 30	16 21	16 11
	2	18 17	18 05	17 52	17 37	17 29	17 19	17 08	16 54	16 48	16 41	16 33	16 24	16 14
	3	18 17	18 05	17 53	17 38	17 30	17 20	17 09	16 55	16 49	16 43	16 35	16 26	16 16
	4	18 18	18 06	17 53	17 39	17 31	17 21	17 10	16 57	16 51	16 45	16 37	16 29	16 19
	5	18 18	18 06	17 54	17 40	17 32	17 22	17 12	16 59	16 53	16 47	16 39	16 31	16 22
	6	18 18	18 06	17 54	17 40	17 33	17 24	17 13	17 01	16 55	16 49	16 41	16 33	16 24
	7	18 18	18 07	17 55	17 41	17 34	17 25	17 15	17 02	16 57	16 51	16 44	16 36	16 27

ENDING OF EVENING TWILIGHT.

		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan	1	19 22	19 05	18 50	18 36	18 29	18 22	18 15	18 07	18 04	18 00	17 56	17 53	17 48
	11	19 26	19 10	18 56	18 43	18 37	18 30	18 24	18 17	18 14	18 11	18 08	18 04	18 01
	21	19 28	19 14	19 02	18 50	18 45	18 40	18 34	18 29	18 27	18 25	18 22	18 20	18 18
	31	19 29	19 17	19 07	18 58	18 54	18 50	18 46	18 43	18 42	18 40	18 39	18 38	18 37
Feb.	10	19 29	19 19	19 11	19 05	19 03	19 00	18 59	18 58	18 58	18 58	18 58	18 58	18 58

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Feb. 7	06 11	06 22	06 34	06 47	06 55	07 04	07 14	07 27	07 33	07 39	07 46	07 54	08 03
8	06 11	06 22	06 34	06 47	06 54	07 03	07 13	07 25	07 31	07 37	07 44	07 52	08 00
9	06 11	06 21	06 33	06 46	06 53	07 02	07 12	07 24	07 29	07 35	07 42	07 49	07 58
10	06 11	06 21	06 33	06 45	06 52	07 01	07 10	07 22	07 27	07 33	07 40	07 47	07 55
11	06 11	06 21	06 32	06 44	06 52	07 00	07 09	07 20	07 25	07 31	07 37	07 45	07 53
12	06 11	06 21	06 32	06 44	06 51	06 58	07 08	07 18	07 24	07 29	07 35	07 42	07 50
13	06 11	06 21	06 31	06 43	06 50	06 57	07 06	07 17	07 22	07 27	07 33	07 40	07 47
14	06 11	06 20	06 31	06 42	06 49	06 56	07 05	07 15	07 20	07 25	07 31	07 37	07 45
15	06 11	06 20	06 30	06 41	06 48	06 55	07 03	07 13	07 18	07 23	07 29	07 35	07 42
16	06 11	06 20	06 30	06 40	06 47	06 53	07 02	07 11	07 16	07 21	07 26	07 32	07 39
17	06 11	06 20	06 29	06 39	06 46	06 52	07 00	07 10	07 14	07 19	07 24	07 30	07 37
18	06 11	06 19	06 28	06 39	06 44	06 51	06 59	07 08	07 12	07 17	07 22	07 27	07 34
19	06 11	06 19	06 28	06 38	06 43	06 50	06 57	07 06	07 10	07 14	07 19	07 25	07 31
20	06 11	06 19	06 27	06 37	06 42	06 48	06 56	07 04	07 08	07 12	07 17	07 22	07 28
21	06 10	06 18	06 26	06 36	06 41	06 47	06 54	07 02	07 06	07 10	07 15	07 20	07 26
22	06 10	06 18	06 26	06 35	06 40	06 45	06 52	07 00	07 04	07 08	07 12	07 17	07 23
23	06 10	06 18	06 25	06 34	06 39	06 44	06 51	06 58	07 02	07 06	07 10	07 15	07 20
24	06 10	06 17	06 24	06 33	06 38	06 43	06 49	06 56	07 00	07 03	07 07	07 12	07 17
25	06 10	06 17	06 24	06 32	06 36	06 41	06 47	06 54	06 58	07 01	07 05	07 09	07 14
26	06 10	06 16	06 23	06 31	06 35	06 40	06 46	06 52	06 55	06 59	07 03	07 07	07 11
27	06 10	06 16	06 22	06 30	06 34	06 38	06 44	06 50	06 53	06 56	07 00	07 04	07 08
28	06 10	06 16	06 22	06 29	06 33	06 37	06 42	06 48	06 51	06 54	06 58	07 01	07 06
29	06 09	06 15	06 21	06 28	06 31	06 35	06 41	06 46	06 49	06 52	06 55	06 59	07 03
Mar. 1	06 09	06 15	06 20	06 26	06 30	06 34	06 39	06 44	06 47	06 50	06 53	06 56	07 00
2	06 09	06 14	06 19	06 25	06 29	06 33	06 37	06 42	06 45	06 47	06 50	06 53	06 57
3	06 09	06 14	06 19	06 24	06 28	06 31	06 35	06 40	06 42	06 45	06 48	06 50	06 54
4	06 09	06 13	06 18	06 23	06 26	06 30	06 34	06 38	06 40	06 42	06 45	06 48	06 51
5	06 08	06 13	06 17	06 22	06 25	06 28	06 32	06 36	06 38	06 40	06 42	06 45	06 48
6	06 08	06 12	06 16	06 21	06 24	06 26	06 30	06 34	06 36	06 38	06 40	06 42	06 45
7	06 08	06 12	06 15	06 20	06 22	06 25	06 28	06 32	06 33	06 35	06 37	06 40	06 42
8	06 08	06 11	06 15	06 19	06 21	06 23	06 26	06 30	06 31	06 33	06 35	06 37	06 39
9	06 07	06 11	06 14	06 18	06 20	06 22	06 25	06 28	06 29	06 30	06 32	06 34	06 36
10	06 07	06 10	06 13	06 16	06 18	06 20	06 23	06 25	06 27	06 28	06 30	06 31	06 33
11	06 07	06 10	06 12	06 15	06 17	06 19	06 21	06 23	06 24	06 26	06 27	06 28	06 30
12	06 07	06 09	06 11	06 14	06 16	06 17	06 19	06 21	06 22	06 23	06 24	06 26	06 27
13	06 06	06 08	06 10	06 13	06 14	06 16	06 17	06 19	06 20	06 21	06 22	06 23	06 24
14	06 06	06 08	06 10	06 12	06 13	06 14	06 15	06 17	06 17	06 18	06 19	06 20	06 21

BEGINNING OF MORNING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan. 31	04 58	05 10	05 20	05 30	05 34	05 38	05 42	05 45	05 47	05 48	05 49	05 51	05 52	
Feb. 10	05 00	05 10	05 18	05 24	05 27	05 31	05 32	05 33	05 33	05 33	05 33	05 33	05 33	
20	05 00	05 08	05 13	05 17	05 18	05 18	05 18	05 16	05 15	05 14	05 13	05 11	05 09	
Mar. 1	05 00	05 04	05 07	05 07	05 06	05 04	05 02	04 57	04 55	04 52	04 49	04 46	04 41	
11	04 58	05 00	04 59	04 56	04 53	04 49	04 44	04 36	04 32	04 28	04 23	04 17	04 10	
21	04 56	04 54	04 51	04 44	04 39	04 32	04 24	04 12	04 07	04 00	03 53	03 44	03 34	

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

585

LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Feb. 7	18 18	18 07	17 55	17 41	17 34	17 25	17 15	17 02	16 57	16 51	16 44	16 36	16 27
8	18 18	18 07	17 55	17 42	17 35	17 26	17 16	17 04	16 59	16 53	16 46	16 38	16 29
9	18 18	18 07	17 56	17 43	17 36	17 27	17 18	17 06	17 01	16 55	16 48	16 40	16 32
10	18 18	18 07	17 56	17 44	17 37	17 29	17 19	17 08	17 02	16 57	16 50	16 43	16 35
11	18 18	18 08	17 57	17 45	17 38	17 30	17 20	17 09	17 04	16 59	16 52	16 45	16 37
12	18 18	18 08	17 57	17 45	17 39	17 31	17 22	17 11	17 06	17 01	16 55	16 48	16 40
13	18 18	18 08	17 58	17 46	17 40	17 32	17 23	17 13	17 08	17 03	16 57	16 50	16 43
14	18 18	18 08	17 58	17 47	17 41	17 33	17 25	17 14	17 10	17 05	16 50	16 52	16 45
15	18 18	18 09	17 59	17 48	17 42	17 34	17 26	17 16	17 12	17 07	17 01	16 55	16 48
16	18 18	18 09	17 59	17 49	17 43	17 36	17 28	17 18	17 14	17 09	17 03	16 57	16 51
17	18 18	18 09	18 00	17 49	17 43	17 37	17 29	17 20	17 15	17 11	17 05	17 00	16 53
18	18 18	18 09	18 00	17 50	17 45	17 38	17 30	17 21	17 17	17 13	17 08	17 02	16 56
19	18 18	18 09	18 01	17 51	17 45	17 39	17 32	17 23	17 19	17 15	17 10	17 04	16 58
20	18 17	18 09	18 01	17 52	17 46	17 40	17 33	17 25	17 21	17 17	17 12	17 07	17 01
21	18 17	18 10	18 02	17 52	17 47	17 41	17 35	17 26	17 23	17 19	17 14	17 09	17 04
22	18 17	18 10	18 02	17 53	17 48	17 43	17 36	17 28	17 25	17 21	17 16	17 12	17 06
23	18 17	18 10	18 02	17 54	17 49	17 44	17 37	17 30	17 27	17 23	17 19	17 14	17 09
24	18 17	18 10	18 03	17 55	17 50	17 45	17 39	17 32	17 28	17 25	17 21	17 16	17 11
25	18 17	18 10	18 03	17 55	17 51	17 46	17 40	17 33	17 30	17 27	17 23	17 18	17 14
26	18 17	18 10	18 04	17 56	17 52	17 47	17 42	17 35	17 32	17 29	17 25	17 21	17 16
27	18 16	18 10	18 04	17 57	17 53	17 48	17 43	17 37	17 34	17 31	17 27	17 23	17 19
28	18 16	18 10	18 04	17 58	17 54	17 49	17 44	17 38	17 36	17 33	17 29	17 26	17 22
29	18 16	18 11	18 05	17 58	17 55	17 50	17 46	17 40	17 38	17 35	17 31	17 28	17 24
Mar. 1	18 16	18 11	18 05	17 59	17 56	17 52	17 47	17 42	17 39	17 37	17 34	17 30	17 27
2	18 16	18 11	18 05	18 00	17 56	17 53	17 48	17 43	17 41	17 38	17 36	17 33	17 29
3	18 15	18 11	18 06	18 00	17 57	17 54	17 50	17 45	17 43	17 40	17 38	17 35	17 32
4	18 15	18 11	18 06	18 01	17 58	17 55	17 51	17 47	17 45	17 42	17 40	17 37	17 34
5	18 15	18 11	18 06	18 02	17 59	17 56	17 52	17 48	17 46	17 44	17 42	17 39	17 37
6	18 15	18 11	18 07	18 02	18 00	17 57	17 54	17 50	17 48	17 46	17 44	17 42	17 39
7	18 15	18 11	18 07	18 03	18 01	17 58	17 55	17 51	17 50	17 48	17 46	17 44	17 42
8	18 14	18 11	18 07	18 04	18 02	17 59	17 56	17 53	17 52	17 50	17 48	17 46	17 44
9	18 14	18 11	18 08	18 04	18 02	18 00	17 58	17 55	17 53	17 52	17 50	17 49	17 47
10	18 14	18 11	18 08	18 05	18 03	18 01	17 59	17 56	17 55	17 54	17 52	17 51	17 49
11	18 14	18 11	18 08	18 06	18 04	18 02	18 00	17 57	17 57	17 55	17 55	17 53	17 52
12	18 13	18 11	18 09	18 06	18 05	18 03	18 02	18 00	17 59	17 58	17 57	17 55	17 54
13	18 13	18 11	18 09	18 07	18 06	18 04	18 03	18 01	18 00	18 00	17 59	17 58	17 56
14	18 13	18 11	18 09	18 08	18 07	18 05	18 04	18 03	18 02	18 02	18 01	18 00	17 59

ENDING OF EVENING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan. 31	19 29	19 17	19 07	18 58	18 54	18 50	18 46	18 43	18 42	18 40	18 39	18 38	18 37	
Feb. 10	19 29	19 19	19 11	19 05	19 03	19 00	18 59	18 58	18 58	18 58	18 58	18 58	18 58	
20	19 27	19 20	19 15	19 12	19 11	19 11	19 12	19 13	19 14	19 16	19 17	19 19	19 21	
Mar. 1	19 25	19 21	19 19	19 19	19 20	19 22	19 25	19 29	19 32	19 35	19 38	19 42	19 46	
11	19 22	19 21	19 22	19 25	19 28	19 33	19 38	19 46	19 50	19 55	20 00	20 06	20 14	
21	19 19	19 21	19 25	19 32	19 37	19 44	19 53	20 05	20 10	20 17	20 25	20 34	20 44	

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING
OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	°												
Date.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Mar. 14	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15	06 16	06 17
15	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15	06 16	06 17	06 18
16	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15	06 16	06 17
17	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15	06 16	06 17
18	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15	06 16	06 17
19	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15	06 16	06 17
20	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15	06 16
21	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15	06 16
22	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15	06 16
23	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15
24	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15
25	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14	06 15
26	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14
27	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14
28	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14
29	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13	06 14
30	06 01	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13
31	06 01	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13
Apr. 1	06 01	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12	06 13
2	06 00	06 01	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12
3	06 00	06 01	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12
4	06 00	06 01	06 02	06 03	06 04	06 05	06 06	06 07	06 08	06 09	06 10	06 11	06 12
5	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59
6	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59
7	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59
8	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59	05 59
9	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58
10	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58
11	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58	05 58
12	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57
13	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57
14	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57
15	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57	05 57
16	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56
17	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56
18	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56
19	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56
20	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56	05 56

BEGINNING OF MORNING TWILIGHT.

	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m
Mar. 11	04	58	05	00	04	59	04	56	04	53	04	49	04	44	04	36
21	04	56	04	54	04	51	04	44	04	39	04	32	04	24	04	12
31	04	52	04	48	04	41	04	31	04	24	04	14	04	02	03	47
Apr. 10	04	49	04	42	04	32	04	17	04	08	03	56	03	40	03	20
20	04	46	04	36	04	22	04	03	52	03	37	03	18	02	52	02

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

587

LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.																
Date.	0°	+15°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°			
	h m	a m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Mar. 14	18 13	18 11	18 09	18 08	18 07	18 05	18 04	18 03	18 02	18 02	18 01	18 00	17 59			
15	18 12	18 11	18 10	18 08	18 07	18 06	18 06	18 04	18 04	18 03	18 03	18 02	18 01			
16	18 12	18 11	18 10	18 09	18 08	18 07	18 07	18 06	18 06	18 05	18 05	18 04	18 04			
17	18 12	18 11	18 10	18 09	18 08	18 07	18 08	18 08	18 07	18 07	18 07	18 07	18 06			
18	18 12	18 11	18 10	18 10	18 10	18 10	18 09	18 09	18 09	18 09	18 09	18 09	18 09			
19	18 11	18 11	18 11	18 11	18 11	18 11	18 11	18 11	18 11	18 11	18 11	18 11	18 11			
20	18 11	18 11	18 11	18 11	18 12	18 12	18 12	18 12	18 12	18 13	18 13	18 13	18 14			
21	18 11	18 11	18 12	18 12	18 12	18 13	18 13	18 14	18 14	18 15	18 15	18 16	18 16			
22	18 10	18 11	18 12	18 13	18 13	18 14	18 15	18 16	18 16	18 17	18 17	18 18	18 19			
23	18 10	18 11	18 12	18 13	18 14	18 15	18 16	18 17	18 18	18 18	18 19	18 20	18 21			
24	18 10	18 11	18 12	18 14	18 15	18 16	18 17	18 19	18 20	18 20	18 21	18 22	18 23			
25	18 09	18 11	18 12	18 14	18 15	18 17	18 18	18 20	18 21	18 22	18 23	18 25	18 26			
26	18 09	18 11	18 13	18 15	18 16	18 18	18 20	18 22	18 23	18 24	18 25	18 27	18 28			
27	18 09	18 11	18 13	18 16	18 17	18 19	18 21	18 23	18 25	18 26	18 27	18 29	18 31			
28	18 08	18 11	18 13	18 16	18 18	18 20	18 22	18 25	18 26	18 28	18 29	18 31	18 33			
29	18 08	18 11	18 13	18 17	18 19	18 21	18 23	18 27	18 28	18 30	18 31	18 33	18 36			
30	18 08	18 11	18 14	18 17	18 20	18 22	18 25	18 28	18 30	18 32	18 34	18 36	18 38			
31	18 07	18 11	18 14	18 18	18 20	18 23	18 26	18 30	18 31	18 33	18 36	18 38	18 40			
Apr. 1	18 07	18 11	18 14	18 19	18 21	18 24	18 27	18 31	18 33	18 35	18 38	18 40	18 43			
2	18 07	18 11	18 14	18 19	18 22	18 25	18 28	18 33	18 35	18 37	18 40	18 42	18 45			
3	18 07	18 11	18 15	18 20	18 23	18 26	18 30	18 34	18 37	18 39	18 42	18 44	18 48			
4	18 06	18 11	18 15	18 20	18 23	18 27	18 31	18 36	18 38	18 41	18 44	18 47	18 50			
5	18 06	18 11	18 15	18 21	18 24	18 28	18 32	18 37	18 40	18 43	18 46	18 49	18 53			
6	18 06	18 10	18 16	18 22	18 25	18 29	18 34	18 39	18 42	18 45	18 48	18 51	18 55			
7	18 06	18 10	18 16	18 22	18 26	18 30	18 35	18 41	18 43	18 46	18 50	18 53	18 58			
8	18 05	18 10	18 16	18 23	18 27	18 31	18 36	18 42	18 45	18 48	18 52	18 56	19 00			
9	18 05	18 10	18 16	18 23	18 27	18 32	18 37	18 44	18 47	18 50	18 54	18 58	19 02			
10	18 05	18 10	18 17	18 24	18 28	18 33	18 39	18 45	18 49	18 52	18 56	19 00	19 05			
11	18 05	18 10	18 17	18 25	18 29	18 34	18 40	18 47	18 50	18 54	18 58	19 02	19 07			
12	18 05	18 10	18 17	18 25	18 30	18 35	18 41	18 48	18 52	18 56	19 00	19 04	19 10			
13	18 04	18 10	18 18	18 26	18 31	18 36	18 42	18 50	18 54	18 57	19 02	19 07	19 12			
14	18 04	18 10	18 18	18 26	18 31	18 37	18 44	18 51	18 55	18 59	19 04	19 09	19 15			
15	18 03	18 10	18 18	18 27	18 32	18 38	18 45	18 53	18 57	19 01	19 06	19 11	19 17			
16	18 03	18 10	18 18	18 28	18 33	18 39	18 46	18 55	18 59	19 03	19 08	19 13	19 20			
17	18 03	18 10	18 19	18 28	18 34	18 40	18 47	18 56	19 00	19 05	19 10	19 16	19 22			
18	18 03	18 11	18 19	18 29	18 35	18 41	18 49	18 58	19 02	19 07	19 12	19 18	19 25			
19	18 03	18 11	18 19	18 29	18 35	18 42	18 50	18 59	19 04	19 09	19 14	19 20	19 27			
20	18 02	18 11	18 20	18 30	18 36	18 43	18 51	19 01	19 06	19 10	19 16	19 22	19 29			

ENDING OF EVENING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Mar. 11	19 22	19 21	19 22	19 25	19 28	19 33	19 38	19 46	19 50	19 55	20 00	20 06	20 14			
21	19 19	19 21	19 25	19 32	19 37	19 44	19 53	20 05	20 10	20 17	20 25	20 34	20 44			
31	19 16	19 21	19 28	19 39	19 46	19 56	20 08	20 24	20 32	20 41	20 52	21 04	21 19			
Apr. 10	19 14	19 21	19 32	19 46	19 56	20 09	20 24	20 45	20 56	21 08	21 23	21 41	22 04			
20	19 12	19 22	19 36	19 55	20 07	20 22	20 42	21 09	21 23	21 40	22 01	22 31	23 26			

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
Apr. 20	05 56 05	04 47 05	03 39 05	02 28 05	01 22 05	00 16 05	00 08 04	00 58 04	01 53 04	04 48 04	04 43 04	04 37 04	04 30
21	05 55 05	04 47 05	03 38 05	02 27 05	01 21 05	00 14 05	00 06 04	00 56 04	01 51 04	04 46 04	04 40 04	04 34 04	04 27
22	05 55 05	04 46 05	03 37 05	02 26 05	01 20 05	00 13 05	00 04 04	00 54 04	01 49 04	04 44 04	04 38 04	04 31 04	04 24
23	05 55 05	04 46 05	03 36 05	02 25 05	01 19 05	00 11 05	00 02 04	00 52 04	01 47 04	04 42 04	04 36 04	04 29 04	04 21
24	05 55 05	04 45 05	03 36 05	02 24 05	01 17 05	00 10 05	00 01 04	00 50 04	01 45 04	04 39 04	04 33 04	04 26 04	04 18
25	05 55 05	04 45 05	03 35 05	02 23 05	01 16 05	00 08 04	00 59 04	01 48 04	01 43 04	04 37 04	04 31 04	04 24 04	04 16
26	05 54 05	04 45 05	03 34 05	02 22 05	01 15 05	00 07 04	00 58 04	01 46 04	01 41 04	04 35 04	04 28 04	04 21 04	04 13
27	05 54 05	04 44 05	03 34 05	02 21 05	01 14 05	00 06 04	00 56 04	01 44 04	01 39 04	04 33 04	04 26 04	04 18 04	04 10
28	05 54 05	04 44 05	03 33 05	02 20 05	01 13 05	00 04 04	00 54 04	01 42 04	01 37 04	04 31 04	04 24 04	04 16 04	04 07
29	05 54 05	04 44 05	03 32 05	02 19 05	01 12 05	00 03 04	00 53 04	01 41 04	01 35 04	04 28 04	04 21 04	04 13 04	04 04
30	05 54 05	04 43 05	03 32 05	02 18 05	01 11 05	00 02 04	00 51 04	01 39 04	01 33 04	04 26 04	04 19 04	04 11 04	04 02
May 1	05 54 05	04 43 05	03 31 05	02 18 05	01 10 05	00 01 04	00 50 04	01 37 04	01 31 04	04 24 04	04 17 04	04 08 04	03 59
2	05 54 05	04 42 05	03 30 05	02 17 05	00 09 04	00 59 04	01 48 04	01 35 04	01 29 04	04 22 04	04 14 04	04 06 04	03 56
3	05 53 05	04 42 05	03 30 05	02 16 05	00 08 04	00 58 04	01 47 04	01 34 04	01 27 04	04 20 04	04 12 04	04 03 04	03 53
4	05 53 05	04 42 05	03 29 05	02 15 05	00 07 04	00 57 04	01 45 04	01 32 04	01 25 04	04 18 04	04 10 04	04 01 04	03 51
5	05 53 05	04 41 05	03 29 05	02 14 05	00 06 04	00 56 04	01 44 04	01 30 04	01 24 04	04 16 04	04 08 04	03 59 04	03 48
6	05 53 05	04 41 05	03 28 05	02 13 05	00 05 04	00 54 04	01 43 04	01 28 04	01 22 04	04 14 04	04 06 04	03 56 04	03 45
7	05 53 05	04 41 05	03 28 05	02 12 05	00 04 04	00 53 04	01 41 04	01 27 04	01 20 04	04 12 04	04 04 04	03 54 04	03 43
8	05 53 05	04 40 05	03 27 05	02 12 05	00 03 04	00 52 04	01 40 04	01 25 04	01 18 04	04 10 04	04 01 04	03 52 04	03 40
9	05 53 05	04 40 05	03 27 05	02 11 05	00 02 04	00 51 04	01 39 04	01 23 04	01 16 04	04 08 04	03 59 04	03 49 04	03 38
10	05 53 05	04 40 05	03 26 05	02 10 05	00 01 04	00 50 04	01 37 04	01 22 04	01 15 04	04 06 04	03 57 04	03 47 04	03 35
11	05 53 05	04 40 05	03 26 05	02 09 05	00 00 04	00 49 04	01 36 04	01 20 04	01 13 04	04 05 04	03 55 04	03 45 04	03 33
12	05 53 05	04 40 05	03 25 05	02 09 04	00 59 04	00 48 04	01 35 04	01 19 04	01 11 04	04 03 04	03 53 04	03 43 04	03 30
13	05 53 05	04 39 05	03 25 05	02 08 04	00 58 04	00 47 04	01 34 04	01 17 04	01 10 04	04 01 04	03 51 04	03 40 04	03 28
14	05 53 05	04 39 05	03 24 05	02 07 04	00 57 04	00 46 04	01 32 04	01 16 04	01 08 04	03 59 04	03 50 04	03 38 04	03 25
15	05 53 05	04 39 05	03 24 05	02 07 04	00 57 04	00 45 04	01 31 04	01 14 04	01 06 04	03 58 04	03 48 04	03 36 04	03 23
16	05 53 05	04 39 05	03 24 05	02 06 04	00 56 04	00 44 04	01 30 04	01 13 04	01 05 04	03 56 04	03 46 04	03 34 04	03 21
17	05 53 05	04 39 05	03 23 05	02 06 04	00 55 04	00 43 04	01 29 04	01 12 04	01 03 04	03 54 04	03 44 04	03 32 04	03 18
18	05 53 05	04 38 05	03 23 05	02 05 04	00 54 04	00 42 04	01 28 04	01 10 04	01 02 04	03 53 04	03 42 04	03 30 04	03 16
19	05 53 05	04 38 05	03 23 05	02 04 04	00 54 04	00 42 04	01 27 04	01 09 04	01 01 04	03 51 04	03 40 04	03 28 04	03 14
20	05 53 05	04 38 05	03 22 05	02 04 04	00 53 04	00 41 04	01 26 04	01 08 04	00 59 04	03 50 04	03 39 04	03 26 04	03 12
21	05 53 05	04 38 05	03 22 05	02 03 04	00 52 04	00 40 04	01 25 04	01 07 04	00 58 04	03 48 04	03 37 04	03 24 04	03 09
22	05 53 05	04 38 05	03 22 05	02 03 04	00 52 04	00 39 04	01 24 04	01 06 04	00 57 04	03 47 04	03 36 04	03 23 04	03 07
23	05 53 05	04 38 05	03 21 05	02 02 04	00 51 04	00 38 04	01 23 04	01 04 04	00 55 04	03 45 04	03 34 04	03 21 04	03 05
24	05 53 05	04 38 05	03 21 05	02 02 04	00 51 04	00 38 04	01 22 04	01 03 04	00 54 04	03 44 04	03 32 04	03 19 04	03 03
25	05 53 05	04 38 05	03 21 05	02 01 04	00 50 04	00 37 04	01 21 04	01 02 04	00 53 04	03 43 04	03 31 04	03 17 04	03 01
26	05 53 05	04 38 05	03 21 05	02 01 04	00 50 04	00 36 04	01 21 04	01 01 04	00 52 04	03 42 04	03 30 04	03 16 04	03 00
27	05 53 05	04 38 05	03 21 05	02 01 04	00 49 04	00 36 04	01 20 04	01 00 04	00 51 04	03 40 04	03 28 04	03 14 04	02 58

BEGINNING OF MORNING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Apr. 20	04 46	04 36	04 22	04 04	03 52	03 37	03 18	02 52	02 38	02 22	02 01	01 34	01 00	00 47
30	04 43	04 30	04 14	03 52	03 38	03 19	02 55	02 22	02 03	01 39	01 04			
May 10	04 41	04 26	04 07	03 41	03 24	03 02	02 34	01 50	01 23	00 36				
20	04 40	04 23	04 01	03 32	03 13	02 48	02 14	01 15	00 15					
30	04 40	04 21	03 58	03 26	03 04	02 37	01 56	00 27						

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602..

SUNRISE AND SUNSET.

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LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
Apr. 20	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
21	18 02	18 11	18 20	18 30	18 36	18 43	18 51	19 01	19 06	19 10	19 16	19 22	19 29
22	18 02	18 11	18 20	18 31	18 37	18 44	18 52	19 02	19 07	19 12	19 18	19 25	19 32
23	18 02	18 11	18 21	18 32	18 38	18 45	18 54	19 04	19 09	19 14	19 20	19 27	19 34
24	18 02	18 11	18 21	18 33	18 39	18 46	18 55	19 06	19 11	19 16	19 22	19 29	19 37
25	18 01	18 11	18 21	18 33	18 40	18 48	18 58	19 09	19 14	19 20	19 26	19 34	19 42
26	18 01	18 11	18 22	18 34	18 41	18 49	18 59	19 10	19 16	19 22	19 28	19 36	19 44
27	18 01	18 11	18 22	18 34	18 42	18 50	19 00	19 12	19 17	19 24	19 30	19 38	19 47
28	18 01	18 11	18 22	18 35	18 43	18 51	19 01	19 13	19 19	19 25	19 32	19 40	19 49
29	18 01	18 11	18 23	18 36	18 43	18 52	19 02	19 15	19 21	19 27	19 34	19 42	19 52
30	18 01	18 11	18 23	18 36	18 44	18 53	19 04	19 16	19 22	19 29	19 36	19 45	19 54
May 1	18 01	18 12	18 23	18 37	18 45	18 54	19 05	19 18	19 24	19 31	19 38	19 47	19 57
2	18 00	18 12	18 24	18 38	18 46	18 55	19 06	19 19	19 26	19 33	19 40	19 49	19 59
3	18 00	18 12	18 24	18 38	18 47	18 56	19 07	19 21	19 27	19 35	19 42	19 51	20 02
4	18 00	18 12	18 24	18 39	18 48	18 57	19 09	19 22	19 29	19 36	19 44	19 54	20 04
5	18 00	18 12	18 25	18 40	18 48	18 58	19 10	19 24	19 31	19 38	19 46	19 56	20 07
6	18 00	18 12	18 25	18 40	18 49	18 59	19 11	19 25	19 32	19 40	19 48	19 58	20 09
7	18 00	18 12	18 26	18 41	18 50	19 00	19 12	19 27	19 34	19 42	19 50	20 00	20 12
8	18 00	18 12	18 26	18 42	18 51	19 01	19 14	19 28	19 36	19 43	19 52	20 02	20 14
9	18 00	18 13	18 26	18 42	18 52	19 02	19 15	19 30	19 37	19 45	19 54	20 05	20 16
10	18 00	18 13	18 27	18 43	18 52	19 03	19 16	19 31	19 39	19 47	19 56	20 07	20 19
11	18 00	18 13	18 27	18 43	18 53	19 04	19 17	19 33	19 40	19 49	19 58	20 09	20 21
12	18 00	18 13	18 28	18 44	18 54	19 05	19 18	19 34	19 42	19 51	20 00	20 11	20 24
13	18 00	18 13	18 28	18 45	18 55	19 06	19 19	19 36	19 44	19 52	20 02	20 13	20 26
14	18 00	18 13	18 28	18 45	18 56	19 07	19 21	19 37	19 45	19 54	20 04	20 15	20 28
15	18 00	18 14	18 29	18 46	18 56	19 08	19 22	19 39	19 47	19 56	20 06	20 17	20 31
16	18 00	18 14	18 29	18 47	18 57	19 09	19 23	19 40	19 48	19 57	20 08	20 19	20 33
17	18 00	18 14	18 30	18 47	18 58	19 10	19 24	19 41	19 50	19 59	20 09	20 22	20 35
18	18 00	18 14	18 30	18 48	18 59	19 11	19 25	19 43	19 51	20 01	20 11	20 24	20 38
19	18 00	18 15	18 30	18 49	18 59	19 12	19 26	19 44	19 53	20 02	20 13	20 26	20 40
20	18 00	18 15	18 31	18 49	19 00	19 13	19 27	19 45	19 54	20 04	20 15	20 27	20 42
21	18 00	18 15	18 31	18 50	19 01	19 13	19 28	19 47	19 56	20 05	20 17	20 29	20 44
22	18 00	18 15	18 32	18 51	19 02	19 14	19 29	19 48	19 57	20 07	20 18	20 31	20 47
23	18 00	18 16	18 32	18 51	19 02	19 15	19 30	19 49	19 58	20 08	20 20	20 33	20 49
24	18 00	18 16	18 32	18 52	19 03	19 16	19 31	19 51	20 00	20 10	20 22	20 35	20 51
25	18 00	18 16	18 33	18 52	19 04	19 17	19 32	19 52	20 01	20 11	20 23	20 37	20 53
26	18 00	18 16	18 33	18 53	19 04	19 18	19 33	19 53	20 02	20 13	20 25	20 39	20 55
27	18 01	18 17	18 34	18 54	19 05	19 19	19 34	19 54	20 04	20 14	20 27	20 41	20 57

ENDING OF EVENING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Apr. 20	19 12	19 22	19 36	19 55	20 07	20 22	20 42	21 09	21 23	21 40	22 01	22 31	23 26	
30	19 12	19 24	19 41	20 03	20 18	20 37	21 01	21 36	21 55	22 20	22 58			
May 10	19 12	19 27	19 46	20 12	20 30	20 52	21 21	22 06	22 35	23 29				
20	19 13	19 30	19 52	20 21	20 41	21 06	21 41	22 42						
30	19 15	19 34	19 58	20 30	20 51	21 19	22 00	23 37						

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
May 27	05 53 05	05 58 05	06 01 05	06 04 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05
28	05 54 05	05 59 05	06 02 05	06 05 05	06 08 05	06 11 05	06 14 05	06 17 05	06 20 05	06 23 05	06 26 05	06 29 05	06 32 05
29	05 55 05	05 60 05	06 03 05	06 06 05	06 09 05	06 12 05	06 15 05	06 18 05	06 21 05	06 24 05	06 27 05	06 30 05	06 33 05
30	05 56 05	05 61 05	06 04 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05
31	05 57 05	05 62 05	06 05 05	06 08 05	06 11 05	06 14 05	06 17 05	06 20 05	06 23 05	06 26 05	06 29 05	06 32 05	06 35 05
June 1	05 58 05	05 63 05	06 06 05	06 09 05	06 12 05	06 15 05	06 18 05	06 21 05	06 24 05	06 27 05	06 30 05	06 33 05	06 36 05
2	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
3	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
4	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
5	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
6	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
7	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
8	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
9	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
10	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
11	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
12	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
13	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
14	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
15	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
16	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
17	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
18	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
19	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
20	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
21	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
22	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
23	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
24	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
25	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
26	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
27	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
28	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
29	05 59 05	05 64 05	06 07 05	06 10 05	06 13 05	06 16 05	06 19 05	06 22 05	06 25 05	06 28 05	06 31 05	06 34 05	06 37 05
30	06 00 05	05 65 05	06 08 05	06 11 05	06 14 05	06 17 05	06 20 05	06 23 05	06 26 05	06 29 05	06 32 05	06 35 05	06 38 05
July 1	06 00 05	05 65 05	06 08 05	06 11 05	06 14 05	06 17 05	06 20 05	06 23 05	06 26 05	06 29 05	06 32 05	06 35 05	06 38 05
2	06 00 05	05 65 05	06 08 05	06 11 05	06 14 05	06 17 05	06 20 05	06 23 05	06 26 05	06 29 05	06 32 05	06 35 05	06 38 05

BEGINNING OF MORNING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
May 20	04 40 04	23 04	01 03	32 03	13 02	48 02	14 01	15 00	15				
30	04 40 04	21 03	58 03	26 03	04 02	37 01	56 00	27					
June 9	04 40 04	21 03	56 03	22 03	00 02	29 01	44						
19	04 42 04	22 03	57 03	22 02	59 02	27 01	39						
29	04 44 04	24 03	59 03	25 03	02 02	31 01	44						
July 9	04 47 04	26 04	03 03	30 03	08 02	39 01	56						

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

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LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
May 27	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
28	18 01	18 17	18 34	18 54	19 05	19 19	19 34	19 54	20 04	20 14	20 27	20 41	20 57
29	18 01	18 17	18 34	18 55	19 06	19 20	19 36	19 57	20 06	20 17	20 30	20 44	21 01
30	18 01	18 17	18 35	18 55	19 07	19 21	19 37	19 58	20 07	20 18	20 31	20 46	21 03
31	18 01	18 17	18 35	18 56	19 08	19 22	19 38	19 59	20 09	20 20	20 32	20 47	21 05
June 1	18 01	18 18	18 35	18 56	19 08	19 22	19 39	20 00	20 10	20 21	20 34	20 49	21 07
2	18 01	18 18	18 36	18 57	19 09	19 23	19 40	20 01	20 11	20 22	20 35	20 50	21 08
3	18 02	18 18	18 36	18 57	19 10	19 24	19 41	20 02	20 12	20 23	20 36	20 52	21 10
4	18 02	18 19	18 37	18 58	19 10	19 24	19 41	20 03	20 13	20 24	20 38	20 53	21 12
5	18 02	18 19	18 37	18 58	19 11	19 25	19 42	20 04	20 14	20 25	20 39	20 54	21 13
6	18 02	18 19	18 37	18 59	19 11	19 26	19 43	20 04	20 15	20 26	20 40	20 56	21 15
7	18 02	18 19	18 38	18 59	19 12	19 26	19 44	20 05	20 16	20 27	20 41	20 57	21 16
8	18 02	18 20	18 38	19 00	19 12	19 27	19 44	20 06	20 17	20 28	20 42	20 58	21 17
9	18 03	18 20	18 39	19 00	19 13	19 27	19 45	20 07	20 17	20 29	20 43	20 59	21 19
10	18 03	18 20	18 39	19 00	19 13	19 28	19 46	20 08	20 18	20 30	20 44	21 00	21 20
11	18 03	18 20	18 39	19 01	19 14	19 28	19 46	20 08	20 19	20 31	20 45	21 01	21 21
12	18 03	18 21	18 39	19 01	19 14	19 29	19 47	20 09	20 20	20 32	20 46	21 02	21 22
13	18 04	18 21	18 40	19 02	19 14	19 29	19 47	20 09	20 20	20 32	20 46	21 03	21 23
14	18 04	18 21	18 40	19 02	19 15	19 30	19 48	20 10	20 21	20 33	20 47	21 04	21 24
15	18 04	18 21	18 40	19 02	19 15	19 30	19 48	20 11	20 21	20 34	20 48	21 05	21 25
16	18 04	18 22	18 41	19 02	19 16	19 31	19 48	20 11	20 22	20 34	20 48	21 05	21 26
17	18 04	18 22	18 41	19 03	19 16	19 31	19 49	20 11	20 22	20 35	20 49	21 06	21 26
18	18 05	18 22	18 41	19 03	19 16	19 31	19 49	20 12	20 23	20 35	20 49	21 06	21 27
19	18 05	18 22	18 41	19 03	19 17	19 32	19 50	20 12	20 23	20 35	20 50	21 07	21 27
20	18 05	18 23	18 42	19 04	19 17	19 32	19 50	20 12	20 23	20 36	20 50	21 07	21 27
21	18 05	18 23	18 42	19 04	19 17	19 32	19 50	20 13	20 24	20 36	20 50	21 07	21 28
22	18 05	18 23	18 42	19 04	19 17	19 32	19 50	20 13	20 24	20 36	20 51	21 07	21 28
23	18 06	18 23	18 42	19 04	19 17	19 32	19 50	20 13	20 24	20 36	20 51	21 07	21 28
24	18 06	18 23	18 42	19 05	19 18	19 33	19 51	20 13	20 24	20 36	20 51	21 08	21 28
25	18 06	18 24	18 43	19 05	19 18	19 33	19 51	20 13	20 24	20 36	20 51	21 08	21 28
26	18 06	18 24	18 43	19 05	19 18	19 33	19 51	20 13	20 24	20 36	20 51	21 07	21 28
27	18 06	18 24	18 43	19 05	19 18	19 33	19 51	20 13	20 24	20 36	20 50	21 07	21 27
28	18 07	18 24	18 43	19 05	19 18	19 33	19 51	20 13	20 24	20 36	20 50	21 07	21 27
29	18 07	18 24	18 43	19 05	19 18	19 33	19 51	20 13	20 24	20 36	20 50	21 06	21 27
30	18 07	18 24	18 43	19 05	19 18	19 33	19 50	20 12	20 23	20 35	20 49	21 06	21 26
July 1	18 07	18 25	18 43	19 05	19 18	19 33	19 50	20 13	20 23	20 35	20 49	21 06	21 25
2	18 08	18 25	18 43	19 05	19 18	19 33	19 50	20 12	20 23	20 35	20 49	21 05	21 25

ENDING OF EVENING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
May 20	19 13	19 30	19 52	20 21	20 41	21 06	21 41	22 42					
30	19 15	19 34	19 58	20 30	20 51	21 19	22 00	23 37					
June 9	19 18	19 37	20 02	20 36	20 59	21 29	22 15						
19	19 20	19 40	20 06	20 40	21 04	21 35	22 23						
29	19 22	19 42	20 07	20 41	21 04	21 35	22 22						
July 9	19 23	19 42	20 06	20 39	21 01	21 30	22 13						

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	Date.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
July	2	06 00	06 05	06 10	06 15	06 20	06 25	06 30	06 35	06 40	06 45	06 50	06 55	07 00
	3	06 01	06 06	06 11	06 16	06 21	06 26	06 31	06 36	06 41	06 46	06 51	06 56	07 01
	4	06 02	06 07	06 12	06 17	06 22	06 27	06 32	06 37	06 42	06 47	06 52	06 57	07 02
	5	06 03	06 08	06 13	06 18	06 23	06 28	06 33	06 38	06 43	06 48	06 53	06 58	07 03
	6	06 04	06 09	06 14	06 19	06 24	06 29	06 34	06 39	06 44	06 49	06 54	06 59	07 04
	7	06 05	06 10	06 15	06 20	06 25	06 30	06 35	06 40	06 45	06 50	06 55	07 00	07 05
	8	06 06	06 11	06 16	06 21	06 26	06 31	06 36	06 41	06 46	06 51	06 56	07 01	07 06
	9	06 07	06 12	06 17	06 22	06 27	06 32	06 37	06 42	06 47	06 52	06 57	07 02	07 07
	10	06 08	06 13	06 18	06 23	06 28	06 33	06 38	06 43	06 48	06 53	06 58	07 03	07 08
	11	06 09	06 14	06 19	06 24	06 29	06 34	06 39	06 44	06 49	06 54	06 59	07 04	07 09
	12	06 10	06 15	06 20	06 25	06 30	06 35	06 40	06 45	06 50	06 55	07 00	07 05	07 10
	13	06 11	06 16	06 21	06 26	06 31	06 36	06 41	06 46	06 51	06 56	07 01	07 06	07 11
	14	06 12	06 17	06 22	06 27	06 32	06 37	06 42	06 47	06 52	06 57	07 02	07 07	07 12
	15	06 13	06 18	06 23	06 28	06 33	06 38	06 43	06 48	06 53	06 58	07 03	07 08	07 13
	16	06 14	06 19	06 24	06 29	06 34	06 39	06 44	06 49	06 54	06 59	07 04	07 09	07 14
	17	06 15	06 20	06 25	06 30	06 35	06 40	06 45	06 50	06 55	07 00	07 05	07 10	07 15
	18	06 16	06 21	06 26	06 31	06 36	06 41	06 46	06 51	06 56	07 01	07 06	07 11	07 16
	19	06 17	06 22	06 27	06 32	06 37	06 42	06 47	06 52	06 57	07 02	07 07	07 12	07 17
	20	06 18	06 23	06 28	06 33	06 38	06 43	06 48	06 53	06 58	07 03	07 08	07 13	07 18
	21	06 19	06 24	06 29	06 34	06 39	06 44	06 49	06 54	06 59	07 04	07 09	07 14	07 19
	22	06 20	06 25	06 30	06 35	06 40	06 45	06 50	06 55	07 00	07 05	07 10	07 15	07 20
	23	06 21	06 26	06 31	06 36	06 41	06 46	06 51	06 56	07 01	07 06	07 11	07 16	07 21
	24	06 22	06 27	06 32	06 37	06 42	06 47	06 52	06 57	07 02	07 07	07 12	07 17	07 22
	25	06 23	06 28	06 33	06 38	06 43	06 48	06 53	06 58	07 03	07 08	07 13	07 18	07 23
	26	06 24	06 29	06 34	06 39	06 44	06 49	06 54	06 59	07 04	07 09	07 14	07 19	07 24
	27	06 25	06 30	06 35	06 40	06 45	06 50	06 55	07 00	07 05	07 10	07 15	07 20	07 25
	28	06 26	06 31	06 36	06 41	06 46	06 51	06 56	07 01	07 06	07 11	07 16	07 21	07 26
	29	06 27	06 32	06 37	06 42	06 47	06 52	06 57	07 02	07 07	07 12	07 17	07 22	07 27
	30	06 28	06 33	06 38	06 43	06 48	06 53	06 58	07 03	07 08	07 13	07 18	07 23	07 28
	31	06 29	06 34	06 39	06 44	06 49	06 54	06 59	07 04	07 09	07 14	07 19	07 24	07 29
Aug.	1	06 30	06 35	06 40	06 45	06 50	06 55	07 00	07 05	07 10	07 15	07 20	07 25	07 30
	2	06 31	06 36	06 41	06 46	06 51	06 56	07 01	07 06	07 11	07 16	07 21	07 26	07 31
	3	06 32	06 37	06 42	06 47	06 52	06 57	07 02	07 07	07 12	07 17	07 22	07 27	07 32
	4	06 33	06 38	06 43	06 48	06 53	06 58	07 03	07 08	07 13	07 18	07 23	07 28	07 33
	5	06 34	06 39	06 44	06 49	06 54	06 59	07 04	07 09	07 14	07 19	07 24	07 29	07 34
	6	06 35	06 40	06 45	06 50	06 55	07 00	07 05	07 10	07 15	07 20	07 25	07 30	07 35
	7	06 36	06 41	06 46	06 51	06 56	07 01	07 06	07 11	07 16	07 21	07 26	07 31	07 36
	8	06 37	06 42	06 47	06 52	06 57	07 02	07 07	07 12	07 17	07 22	07 27	07 32	07 37

BEGINNING OF MORNING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
June 29	04 44	04 44	04 44	04 44	04 44	04 44	04 44	04 44	04 44	04 44	04 44	04 44	04 44	04 44
July 9	04 47	04 47	04 47	04 47	04 47	04 47	04 47	04 47	04 47	04 47	04 47	04 47	04 47	04 47
19	04 49	04 49	04 49	04 49	04 49	04 49	04 49	04 49	04 49	04 49	04 49	04 49	04 49	04 49
29	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50
Aug 8	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50	04 50

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

593

LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.		0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.														
July	2	18 08	18 25	18 43	19 05	19 18	19 33	19 50	20 12	20 23	20 35	20 49	21 05	21 25
	3	18 08	18 25	18 43	19 05	19 18	19 32	19 50	20 12	20 22	20 34	20 48	21 04	21 24
	4	18 08	18 25	18 43	19 05	19 17	19 32	19 50	20 11	20 22	20 34	20 47	21 03	21 23
	5	18 08	18 25	18 43	19 05	19 17	19 32	19 49	20 11	20 21	20 33	20 47	21 03	21 22
	6	18 08	18 25	18 43	19 05	19 17	19 32	19 49	20 10	20 21	20 33	20 46	21 02	21 21
	7	18 08	18 25	18 43	19 04	19 17	19 31	19 49	20 10	20 20	20 32	20 45	21 01	21 20
	8	18 08	18 25	18 43	19 04	19 17	19 31	19 48	20 09	20 20	20 31	20 44	21 00	21 18
	9	18 09	18 25	18 43	19 04	19 16	19 31	19 48	20 09	20 19	20 30	20 44	21 00	21 17
	10	18 09	18 25	18 43	19 04	19 16	19 30	19 47	20 08	20 18	20 29	20 42	21 00	21 16
	11	18 09	18 25	18 43	19 04	19 16	19 30	19 47	20 07	20 17	20 29	20 41	21 00	21 14
	12	18 09	18 25	18 43	19 03	19 16	19 29	19 46	20 07	20 16	20 28	20 40	21 00	21 13
	13	18 09	18 25	18 43	19 03	19 15	19 29	19 45	20 06	20 16	20 27	20 39	21 00	21 11
	14	18 09	18 25	18 43	19 03	19 15	19 28	19 45	20 05	20 15	20 26	20 38	21 00	21 10
	15	18 09	18 25	18 43	19 03	19 14	19 28	19 44	20 04	20 14	20 25	20 37	21 00	21 08
	16	18 09	18 25	18 42	19 02	19 14	19 27	19 43	20 03	20 13	20 23	20 35	21 00	21 06
	17	18 10	18 25	18 42	19 02	19 13	19 27	19 43	20 02	20 12	20 22	20 34	21 00	21 04
	18	18 10	18 25	18 42	19 01	19 13	19 26	19 42	20 01	20 10	20 21	20 33	21 00	21 03
	19	18 10	18 25	18 42	19 01	19 12	19 25	19 41	20 00	20 09	20 20	20 31	21 00	21 01
	20	18 10	18 25	18 41	19 00	19 12	19 25	19 40	19 59	20 08	20 18	20 30	21 00	21 05
	21	18 10	18 25	18 41	19 00	19 11	19 24	19 39	19 58	20 07	20 17	20 28	21 00	21 07
	22	18 10	18 25	18 41	18 59	19 11	19 23	19 38	19 57	20 06	20 15	20 27	21 00	21 05
	23	18 10	18 24	18 40	18 59	19 10	19 22	19 37	19 56	20 04	20 14	20 25	21 00	21 02
	24	18 10	18 24	18 40	18 58	19 09	19 22	19 36	19 54	20 03	20 12	20 23	21 00	21 00
	25	18 10	18 24	18 40	18 58	19 09	19 21	19 35	19 53	20 01	20 11	20 22	21 00	21 00
	26	18 10	18 24	18 39	18 57	19 08	19 20	19 34	19 52	20 00	20 09	20 20	21 00	21 00
	27	18 10	18 24	18 39	18 57	19 07	19 19	19 33	19 50	19 58	20 08	20 18	21 00	21 00
	28	18 10	18 24	18 39	18 56	19 06	19 18	19 32	19 49	19 57	20 06	20 16	21 00	21 00
	29	18 10	18 24	18 38	18 55	19 06	19 17	19 31	19 48	19 55	20 04	20 14	21 00	21 00
	30	18 10	18 23	18 38	18 55	19 05	19 16	19 30	19 46	19 54	20 03	20 12	21 00	21 00
	31	18 10	18 23	18 37	18 54	19 04	19 15	19 28	19 45	19 52	20 01	20 11	21 00	21 00
Aug.	1	18 09	18 23	18 37	18 53	19 03	19 14	19 27	19 43	19 51	19 59	20 09	21 00	21 00
	2	18 09	18 22	18 36	18 53	19 02	19 13	19 26	19 42	19 49	19 57	20 07	21 00	21 00
	3	18 09	18 22	18 36	18 52	19 01	19 12	19 24	19 40	19 47	19 55	20 04	21 00	21 00
	4	18 09	18 22	18 35	18 51	19 00	19 11	19 23	19 38	19 45	19 53	20 02	21 00	21 00
	5	18 09	18 22	18 35	18 50	18 59	19 10	19 22	19 37	19 44	19 52	20 00	21 00	21 00
	6	18 09	18 21	18 34	18 49	18 58	19 08	19 20	19 35	19 42	19 50	19 58	20 08	21 00
	7	18 09	18 21	18 34	18 49	18 57	19 07	19 19	19 33	19 40	19 48	19 56	20 05	21 00
	8	18 09	18 21	18 33	18 48	18 56	19 06	19 18	19 32	19 38	19 46	19 54	20 03	21 00

ENDING OF EVENING TWILIGHT.

		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
June	29	19 22	19 42	20 07	20 41	21 04	21 35	22 22						
July	9	19 23	19 42	20 06	20 39	21 01	21 30	22 13						
	19	19 23	19 41	20 03	20 35	20 54	21 20	21 58	23 06					
	29	19 22	19 38	19 58	20 26	20 44	21 07	21 39	22 28	23 02				
Aug.	8	19 20	19 34	19 52	20 15	20 31	20 51	21 18	21 55	22 17	22 47			

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING
OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Aug. 8	05 02	05 50	05 37	05 23	05 14	05 04	04 53	04 38	04 32	04 24	04 16	04 07	03 56
9	06 02	05 50	05 38	05 23	05 15	05 05	04 54	04 40	04 33	04 26	04 18	04 09	03 59
10	06 02	05 50	05 38	05 24	05 16	05 06	04 55	04 42	04 35	04 28	04 20	04 11	04 01
11	06 02	05 51	05 38	05 25	05 16	05 07	04 56	04 43	04 37	04 30	04 22	04 13	04 03
12	06 02	05 51	05 39	05 25	05 17	05 08	04 57	04 44	04 38	04 32	04 24	04 16	04 06
13	05 01	05 51	05 39	05 26	05 18	05 09	04 59	04 46	04 40	04 33	04 26	04 18	04 08
14	06 01	05 51	05 39	05 26	05 19	05 10	05 00	04 47	04 42	04 35	04 28	04 20	04 11
15	06 01	05 51	05 40	05 27	05 19	05 11	05 01	04 49	04 43	04 37	04 30	04 22	04 13
16	06 01	05 51	05 40	05 28	05 20	05 12	05 02	04 50	04 45	04 39	04 32	04 24	04 16
17	06 01	05 51	05 40	05 28	05 21	05 13	05 03	04 52	04 46	04 40	04 34	04 26	04 18
18	06 00	05 51	05 41	05 29	05 22	05 14	05 05	04 53	04 48	04 42	04 36	04 29	04 20
19	06 00	05 51	05 41	05 29	05 22	05 15	05 06	04 55	04 50	04 44	04 38	04 31	04 23
20	06 00	05 51	05 41	05 30	05 23	05 16	05 07	04 56	04 51	04 46	04 40	04 33	04 25
21	06 00	05 51	05 41	05 30	05 24	05 17	05 08	04 58	04 53	04 48	04 42	04 35	04 28
22	05 59	05 51	05 42	05 31	05 25	05 18	05 09	04 59	04 55	04 49	04 44	04 37	04 30
23	05 59	05 51	05 42	05 32	05 25	05 19	05 10	05 01	04 56	04 51	04 46	04 39	04 32
24	05 59	05 51	05 42	05 32	05 26	05 19	05 12	05 02	04 58	04 53	04 47	04 41	04 35
25	05 59	05 51	05 42	05 33	05 27	05 20	05 13	05 04	04 59	04 55	04 49	04 44	04 37
26	05 58	05 51	05 43	05 33	05 28	05 21	05 14	05 05	05 01	04 57	04 51	04 46	04 39
27	05 58	05 51	05 43	05 34	05 28	05 22	05 15	05 07	05 03	04 58	04 53	04 48	04 42
28	05 58	05 51	05 43	05 34	05 29	05 23	05 16	05 08	05 04	05 00	04 55	04 50	04 44
29	05 58	05 51	05 43	05 35	05 30	05 24	05 18	05 10	05 06	05 02	04 57	04 52	04 47
30	05 57	05 51	05 44	05 36	05 31	05 25	05 19	05 11	05 08	05 04	04 59	04 54	04 49
31	05 57	05 51	05 44	05 36	05 31	05 26	05 20	05 13	05 09	05 05	05 01	04 57	04 51
Sept. 1	05 57	05 51	05 44	05 37	05 32	05 27	05 21	05 14	05 11	05 07	05 03	04 59	04 54
2	05 56	05 51	05 44	05 37	05 33	05 28	05 22	05 16	05 12	05 09	05 05	05 01	04 56
3	05 56	05 51	05 45	05 38	05 34	05 29	05 24	05 17	05 14	05 11	05 07	05 03	04 58
4	05 56	05 50	05 45	05 38	05 34	05 30	05 25	05 19	05 16	05 13	05 09	05 05	05 01
5	05 55	05 50	05 45	05 39	05 35	05 31	05 26	05 20	05 17	05 14	05 11	05 07	05 03
6	05 55	05 50	05 45	05 39	05 36	05 32	05 27	05 22	05 19	05 16	05 13	05 09	05 05
7	05 55	05 50	05 46	05 40	05 37	05 33	05 28	05 23	05 21	05 18	05 15	05 12	05 08
8	05 54	05 50	05 46	05 40	05 37	05 34	05 30	05 25	05 22	05 20	05 17	05 14	05 10
9	05 54	05 50	05 46	05 41	05 38	05 35	05 31	05 26	05 24	05 22	05 19	05 16	05 13
10	05 54	05 50	05 46	05 42	05 39	05 36	05 32	05 28	05 26	05 23	05 21	05 18	05 15
11	05 53	05 50	05 46	05 42	05 39	05 37	05 33	05 29	05 27	05 25	05 23	05 20	05 17
12	05 53	05 50	05 47	05 43	05 40	05 38	05 34	05 31	05 29	05 27	05 25	05 22	05 20
13	05 53	05 50	05 47	05 43	05 41	05 38	05 36	05 32	05 30	05 29	05 27	05 24	05 22
14	05 52	05 50	05 47	05 44	05 42	05 39	05 37	05 33	05 32	05 30	05 29	05 27	05 24

BEGINNING OF MORNING TWILIGHT

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Aug. 8	04 50	04 36	04 19	03 55	03 39	03 19	02 51	02 13	01 50	01 18				
18	04 50	04 38	04 24	04 03	03 50	03 33	03 11	02 41	02 25	02 05	01 38	01 00	00 54	
28	04 48	04 40	04 28	04 11	04 00	03 46	03 29	03 05	02 53	02 38	02 21	01 59	01 28	
Sept. 7	04 46	04 40	04 31	04 18	04 10	03 59	03 45	03 27	03 17	03 07	02 54	02 40	02 21	
17	04 43	04 40	04 34	04 25	04 18	04 10	03 46	03 39	03 32	03 22	03 12	02 58		

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

595

LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING
OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
Aug. 8	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
9	18 09	18 21	18 33	18 48	18 56	19 06	19 18	19 32	19 38	19 46	19 54	20 03	20 13
10	18 09	18 20	18 33	18 47	18 55	19 05	19 16	19 30	19 36	19 44	19 52	20 00	20 11
11	18 08	18 20	18 32	18 46	18 54	19 04	19 15	19 28	19 34	19 41	19 49	19 58	20 08
12	18 08	18 19	18 31	18 45	18 53	19 02	19 13	19 26	19 32	19 39	19 47	19 56	20 05
13	18 08	18 19	18 31	18 44	18 52	19 01	19 12	19 25	19 30	19 37	19 45	19 53	20 03
14	18 08	18 18	18 30	18 43	18 51	19 00	19 10	19 23	19 29	19 35	19 42	19 51	20 00
15	18 08	18 18	18 29	18 42	18 50	18 59	19 09	19 21	19 27	19 33	19 40	19 48	19 57
16	18 08	18 18	18 29	18 41	18 49	18 57	19 07	19 19	19 25	19 31	19 38	19 46	19 54
17	18 07	18 17	18 28	18 40	18 48	18 56	19 05	19 17	19 23	19 29	19 35	19 43	19 51
18	18 07	18 17	18 27	18 39	18 46	18 54	19 04	19 15	19 21	19 27	19 33	19 40	19 49
19	18 07	18 16	18 27	18 38	18 45	18 53	19 02	19 13	19 18	19 24	19 31	19 38	19 46
20	18 07	18 16	18 26	18 37	18 44	18 52	19 00	19 11	19 16	19 22	19 28	19 35	19 43
21	18 07	18 15	18 25	18 36	18 43	18 50	18 59	19 09	19 14	19 20	19 26	19 33	19 40
22	18 06	18 15	18 24	18 35	18 42	18 49	18 57	19 07	19 12	19 17	19 23	19 30	19 37
23	18 06	18 14	18 24	18 34	18 40	18 47	18 56	19 06	19 10	19 15	19 21	19 27	19 34
24	18 06	18 13	18 23	18 33	18 39	18 46	18 54	19 04	19 08	19 13	19 18	19 25	19 31
25	18 05	18 13	18 21	18 31	18 37	18 43	18 50	18 59	19 04	19 08	19 13	19 19	19 26
26	18 05	18 12	18 20	18 30	18 35	18 41	18 49	18 57	19 01	19 06	19 11	19 16	19 23
27	18 05	18 12	18 20	18 29	18 34	18 40	18 47	18 55	18 59	19 04	19 08	19 14	19 20
28	18 04	18 11	18 19	18 28	18 33	18 38	18 45	18 53	18 57	19 01	19 06	19 11	19 17
29	18 04	18 11	18 18	18 26	18 31	18 37	18 43	18 51	18 55	18 59	19 03	19 08	19 14
30	18 04	18 10	18 17	18 25	18 30	18 35	18 42	18 49	18 53	18 56	19 01	19 06	19 11
Sept 1	18 03	18 10	18 16	18 24	18 29	18 34	18 40	18 47	18 50	18 54	18 58	19 03	19 08
2	18 03	18 09	18 15	18 23	18 27	18 32	18 38	18 45	18 48	18 52	18 56	19 00	19 05
3	18 03	18 08	18 15	18 22	18 26	18 31	18 36	18 43	18 46	18 49	18 53	18 57	19 02
4	18 02	18 08	18 14	18 20	18 24	18 29	18 34	18 41	18 44	18 47	18 50	18 54	18 59
5	18 02	18 07	18 13	18 19	18 23	18 27	18 32	18 38	18 41	18 44	18 48	18 52	18 56
6	18 02	18 07	18 12	18 18	18 22	18 26	18 30	18 36	18 39	18 42	18 45	18 49	18 53
7	18 01	18 06	18 11	18 17	18 20	18 24	18 29	18 34	18 37	18 39	18 43	18 46	18 50
8	18 01	18 05	18 10	18 16	18 19	18 23	18 27	18 32	18 34	18 37	18 40	18 43	18 47
9	18 01	18 05	18 09	18 14	18 17	18 21	18 25	18 30	18 32	18 35	18 37	18 40	18 44
10	18 00	18 04	18 08	18 13	18 16	18 19	18 23	18 28	18 30	18 32	18 35	18 38	18 41
11	18 00	18 04	18 07	18 12	18 15	18 18	18 21	18 25	18 27	18 30	18 32	18 35	18 38
12	18 00	18 03	18 07	18 11	18 13	18 16	18 19	18 23	18 25	18 27	18 29	18 32	18 35
13	17 59	18 02	18 06	18 09	18 12	18 14	18 17	18 21	18 23	18 25	18 27	18 29	18 31
14	17 59	18 02	18 05	18 08	18 10	18 13	18 15	18 19	18 20	18 22	18 24	18 26	18 28
15	17 50	18 01	18 04	18 07	18 09	18 11	18 14	18 17	18 18	18 20	18 21	18 23	18 25

ENDING OF EVENING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Aug. 8	19 20	19 34	19 52	20 15	20 31	20 51	21 18	21 55	22 17	22 47			
18	19 18	19 29	19 44	20 03	20 17	20 33	20 55	21 24	21 59	22 24	23 04		
28	19 14	19 22	19 34	19 50	20 01	20 14	20 32	20 55	21 07	21 20	21 37	21 58	22 27
Sept. 7	19 10	19 16	19 24	19 37	19 45	19 56	20 09	20 27	20 36	20 46	20 58	21 13	21 30
17	19 06	19 09	19 14	19 23	19 29	19 37	19 47	20 01	20 08	20 15	20 24	20 34	20 46

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Lat.													
Sept. 14	05 52 05	52 05	47 05	41 05	42 05	39 05	37 05	35 05	32 05	30 05	29 05	27 05	24
15	05 52 05	52 05	47 05	41 05	42 05	40 05	38 05	35 05	34 05	32 05	31 05	29 05	27
16	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
17	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
18	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
19	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
20	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
21	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
22	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
23	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
24	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
25	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
26	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
27	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
28	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
29	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
30	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
Oct. 1	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
2	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
3	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
4	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
5	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
6	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
7	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
8	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
9	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
10	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
11	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
12	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
13	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
14	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
15	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
16	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
17	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
18	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
19	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29
20	05 52 05	52 05	47 05	41 05	43 05	41 05	39 05	37 05	35 05	34 05	33 05	31 05	29

BEGINNING OF MORNING TWILIGHT.

	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m
Sept. 7	04	46	04	40	04	31	04	18	04	10	03	59	03	45	03	27	03	17
18	04	43	04	40	04	34	04	25	04	18	04	10	04	00	03	46	03	39
27	04	39	04	39	04	36	04	31	04	27	04	21	04	14	04	04	00	03
Oct. 7	04	36	04	38	04	39	04	37	04	35	04	32	04	27	04	21	04	18
17	04	33	04	38	04	42	04	43	04	43	04	42	04	40	04	36	04	35
27	04	30	04	38	04	45	04	49	04	51	04	52	04	52	04	51	04	51

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET

597

LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
Sept. 14	17 59	18 01	18 04	18 07	18 09	18 11	18 14	18 17	18 18	18 20	18 21	18 23	18 25
15	17 58	18 01	18 03	18 06	18 07	18 09	18 12	18 15	18 16	18 17	18 19	18 20	18 22
16	17 58	18 00	18 02	18 05	18 06	18 08	18 10	18 12	18 13	18 15	18 16	18 18	18 19
17	17 58	17 59	18 01	18 03	18 05	18 06	18 08	18 10	18 11	18 12	18 13	18 15	18 16
18	17 57	17 59	18 00	18 02	18 03	18 04	18 06	18 08	18 09	18 10	18 11	18 12	18 13
19	17 57	17 58	17 59	18 01	18 02	18 03	18 04	18 06	18 06	18 07	18 08	18 09	18 10
20	17 57	17 57	17 58	18 00	18 00	18 01	18 02	18 04	18 04	18 05	18 05	18 06	18 07
21	17 56	17 57	17 57	17 58	17 59	18 00	18 00	18 01	18 02	18 02	18 03	18 03	18 04
22	17 56	17 56	17 57	17 57	17 57	17 58	17 58	17 59	17 59	18 00	18 00	18 01	18 01
23	17 56	17 56	17 56	17 56	17 56	17 56	17 56	17 57	17 57	17 57	17 57	17 58	17 58
24	17 55	17 55	17 55	17 55	17 55	17 55	17 55	17 55	17 55	17 55	17 55	17 55	17 55
25	17 55	17 54	17 54	17 53	17 53	17 53	17 53	17 52	17 52	17 52	17 52	17 52	17 52
26	17 55	17 54	17 53	17 52	17 52	17 51	17 51	17 50	17 50	17 50	17 49	17 49	17 49
27	17 54	17 53	17 52	17 51	17 50	17 50	17 49	17 48	17 48	17 47	17 47	17 46	17 46
28	17 54	17 52	17 51	17 50	17 49	17 48	17 47	17 46	17 46	17 45	17 44	17 44	17 43
29	17 54	17 52	17 50	17 48	17 47	17 46	17 45	17 44	17 44	17 42	17 42	17 41	17 40
Oct. 30	17 53	17 51	17 49	17 47	17 46	17 45	17 43	17 41	17 41	17 40	17 39	17 38	17 37
1	17 53	17 51	17 48	17 46	17 44	17 43	17 41	17 39	17 38	17 37	17 36	17 35	17 34
2	17 53	17 50	17 47	17 45	17 43	17 41	17 39	17 37	17 36	17 35	17 34	17 32	17 31
3	17 52	17 49	17 47	17 44	17 42	17 40	17 38	17 35	17 34	17 32	17 31	17 29	17 28
4	17 52	17 49	17 46	17 42	17 40	17 38	17 36	17 33	17 31	17 30	17 28	17 27	17 25
5	17 52	17 48	17 45	17 41	17 39	17 37	17 34	17 31	17 29	17 28	17 26	17 24	17 22
6	17 51	17 48	17 44	17 40	17 38	17 35	17 32	17 28	17 27	17 25	17 23	17 21	17 19
7	17 51	17 47	17 43	17 39	17 36	17 33	17 30	17 26	17 25	17 23	17 21	17 18	17 16
8	17 51	17 47	17 42	17 38	17 35	17 32	17 28	17 24	17 22	17 20	17 18	17 16	17 13
9	17 51	17 46	17 42	17 37	17 34	17 30	17 27	17 22	17 20	17 18	17 16	17 13	17 10
10	17 50	17 46	17 41	17 35	17 32	17 29	17 25	17 20	17 18	17 15	17 13	17 10	17 07
11	17 50	17 45	17 40	17 34	17 31	17 27	17 23	17 18	17 16	17 13	17 10	17 07	17 04
12	17 50	17 45	17 39	17 33	17 30	17 26	17 21	17 16	17 13	17 11	17 08	17 05	17 01
13	17 50	17 44	17 38	17 32	17 28	17 24	17 19	17 14	17 11	17 08	17 05	17 02	16 58
14	17 49	17 44	17 38	17 31	17 27	17 23	17 18	17 12	17 09	17 06	17 03	16 59	16 55
15	17 49	17 43	17 37	17 30	17 26	17 21	17 16	17 10	17 07	17 04	17 00	16 56	16 52
16	17 49	17 43	17 36	17 29	17 24	17 20	17 14	17 08	17 05	17 01	16 58	16 54	16 49
17	17 49	17 42	17 35	17 27	17 23	17 18	17 12	17 06	17 02	16 59	16 55	16 51	16 46
18	17 49	17 42	17 35	17 26	17 22	17 17	17 11	17 04	17 00	16 57	16 53	16 48	16 43
19	17 48	17 41	17 34	17 25	17 21	17 15	17 09	17 02	16 58	16 54	16 50	16 46	16 40
20	17 48	17 41	17 33	17 24	17 19	17 14	17 07	17 00	16 56	16 52	16 48	16 43	16 38

ENDING OF EVENING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Sept. 7	19 10	19 16	19 24	19 37	19 45	19 56	20 09	20 27	20 36	20 46	20 58	21 13	21 30	
17	19 06	19 09	19 14	19 23	19 37	19 47	20 01	20 08	20 15	20 24	20 34	20 46		
27	19 03	19 03	19 05	19 10	19 14	19 19	19 26	19 36	19 40	19 46	19 52	20 00	20 08	
Oct. 7	19 00	18 57	18 56	18 58	19 00	19 03	19 07	19 13	19 16	19 20	19 24	19 29	19 34	
17	18 58	18 52	18 49	18 47	18 47	18 48	18 50	18 52	18 54	18 56	18 58	19 01	19 04	
27	18 58	18 49	18 43	18 38	18 36	18 35	18 34	18 34	18 35	18 36	18 36	18 37	18 38	

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date													
Oct.	20	05 42 05	40 05	56 06	05 06	10 06	15 06	22 06	29 06	33 06	37 06	41 06	46 06
	21	05 41 05	40 05	57 06	06 06	11 06	16 06	23 06	31 06	35 06	39 06	43 06	48 06
	22	05 41 05	40 05	57 06	06 06	12 06	18 06	24 06	33 06	36 06	40 06	45 06	50 06
	23	05 41 05	40 05	58 06	07 06	12 06	19 06	26 06	34 06	38 06	42 06	47 06	52 06
	24	05 41 05	40 05	58 06	08 06	13 06	20 06	27 06	36 06	40 06	44 06	49 06	55 07
	25	05 41 05	40 05	58 06	08 06	14 06	21 06	28 06	38 06	42 06	46 06	51 06	57 07
	26	05 41 05	40 05	59 06	09 06	15 06	22 06	30 06	39 06	43 06	48 06	53 06	59 07
	27	05 41 05	40 05	59 06	10 06	16 06	23 06	31 06	41 06	45 06	50 06	56 07	02 08
	28	05 41 05	40 05	59 06	11 06	17 06	24 06	32 06	42 06	47 06	52 06	58 07	04 08
	29	05 40 05	40 05	59 06	11 06	18 06	25 06	34 06	44 06	49 06	54 07	00 08	07 08
Nov.	30	05 40 05	40 05	59 06	12 06	19 06	26 06	35 06	46 06	50 06	56 07	02 08	09 08
	31	05 40 05	40 05	59 06	13 06	20 06	27 06	37 06	47 06	52 06	58 07	04 08	11 08
	1	05 40 05	51 06	01 06	14 06	21 06	29 06	38 06	49 06	54 07	00 08	07 08	13 08
	2	05 40 05	51 06	02 06	14 06	22 06	30 06	39 06	51 06	56 07	02 08	08 08	16 08
	3	05 40 05	51 06	02 06	15 06	23 06	31 06	41 06	52 06	58 07	04 08	10 08	18 08
	4	05 40 05	51 06	03 06	16 06	23 06	32 06	42 06	54 07	00 08	07 08	13 08	20 08
	5	05 40 05	51 06	03 06	17 06	24 06	33 06	43 06	56 07	01 08	08 08	15 08	23 08
	6	05 40 05	52 06	04 06	18 06	25 06	34 06	45 06	57 07	03 08	10 08	17 08	25 08
	7	05 40 05	52 06	04 06	18 06	26 06	36 06	46 06	59 07	05 08	12 08	19 08	27 08
	8	05 40 05	52 06	05 06	19 06	27 06	37 06	48 07	01 08	07 08	14 08	21 08	30 08
	9	05 41 05	53 06	05 06	20 06	28 06	38 06	49 07	02 08	09 08	15 08	23 08	32 08
	10	05 41 05	53 06	06 06	21 06	29 06	39 06	50 07	04 08	10 08	17 08	25 08	34 08
	11	05 41 05	53 06	07 06	22 06	30 06	40 06	52 07	06 08	12 08	19 08	27 08	37 08
	12	05 41 05	54 06	07 06	22 06	31 06	41 06	53 07	07 08	14 08	21 08	30 08	39 08
	13	05 41 05	54 06	08 06	23 06	32 06	42 06	54 07	09 08	16 08	23 08	32 08	41 08
	14	05 41 05	54 06	08 06	24 06	33 06	44 06	56 07	11 08	18 08	25 08	34 08	43 08
	15	05 41 05	55 06	09 06	25 06	34 06	45 06	57 07	12 08	19 08	27 08	36 08	46 08
	16	05 41 05	55 06	09 06	26 06	35 06	46 06	59 07	14 08	21 08	29 08	38 08	48 08
	17	05 42 05	55 06	10 06	27 06	36 06	47 07	00 08	16 08	23 08	31 08	40 08	50 08
	18	05 42 05	56 06	11 06	27 06	37 06	48 07	01 08	17 08	25 08	33 08	42 08	52 08
	19	05 42 05	56 06	11 06	28 06	38 06	49 07	03 08	19 08	26 08	35 08	44 08	55 08
	20	05 42 05	57 06	12 06	29 06	39 06	51 07	04 08	20 08	28 08	36 08	46 08	57 08
	21	05 42 05	57 06	12 06	30 06	40 06	52 07	05 08	22 08	30 08	38 08	48 08	59 08
	22	05 43 05	58 06	13 06	31 06	41 06	53 07	07 08	23 08	31 08	40 08	50 08	01 09
	23	05 43 05	58 06	14 06	32 06	42 06	54 07	08 08	25 08	33 08	42 08	52 08	03 09
	24	05 43 05	58 06	14 06	32 06	43 06	55 07	09 08	26 08	35 08	44 08	54 08	05 09
	25	05 43 05	59 06	15 06	33 06	44 06	56 07	10 08	28 08	36 08	45 08	56 08	08 09
	26	05 44 05	59 06	15 06	34 06	45 06	57 07	12 08	29 08	38 08	47 08	57 08	10 09

BEGINNING OF MORNING TWILIGHT.

	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m
Oct	17	04 33 04	38 04	42 04	43 04	43 04	42 04	40 04	36 04	35 04	33 04	30 04	27 04	24 04		
	27	04 30 04	38 04	45 04	49 04	51 04	52 04	52 04	52 04	51 04	51 04	50 04	49 04	47 04		
Nov	6	04 29 04	40 04	49 04	56 04	59 05	02 05	04 05	06 05	07 05	08 05	08 05	09 05	09 05		
	16	04 29 04	42 04	53 05	03 05	08 05	12 05	16 05	20 05	22 05	24 05	26 05	27 05	29 05		
	26	04 30 04	45 04	58 05	10 05	16 05	22 05	27 05	33 05	36 05	38 05	41 05	44 05	47 05		

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

599

LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Oct. 20	17 48	17 41	17 33	17 24	17 19	17 14	17 07	17 00	16 56	16 52	16 48	16 43	16 38
21	17 48	17 40	17 32	17 23	17 18	17 12	17 06	16 58	16 54	16 50	16 46	16 40	16 35
22	17 48	17 40	17 32	17 22	17 17	17 11	17 04	16 56	16 52	16 48	16 43	16 38	16 32
23	17 48	17 40	17 31	17 21	17 16	17 10	17 02	16 54	16 50	16 45	16 41	16 35	16 29
24	17 48	17 39	17 30	17 20	17 15	17 08	17 01	16 52	16 48	16 43	16 38	16 33	16 26
25	17 48	17 39	17 30	17 19	17 14	17 07	16 59	16 50	16 46	16 41	16 36	16 30	16 24
26	17 47	17 38	17 29	17 18	17 12	17 06	16 58	16 48	16 44	16 39	16 34	16 28	16 21
27	17 47	17 38	17 29	17 18	17 11	17 04	16 56	16 46	16 42	16 37	16 31	16 25	16 18
28	17 47	17 38	17 28	17 17	17 10	17 03	16 55	16 45	16 40	16 35	16 29	16 23	16 16
29	17 47	17 37	17 27	17 16	17 09	17 02	16 53	16 43	16 38	16 33	16 27	16 20	16 13
30	17 47	17 37	17 27	17 15	17 08	17 01	16 52	16 41	16 36	16 31	16 25	16 18	16 10
31	17 47	17 37	17 26	17 14	17 07	16 59	16 50	16 39	16 34	16 29	16 22	16 15	16 08
Nov. 1	17 47	17 37	17 26	17 13	17 06	16 58	16 49	16 38	16 32	16 27	16 20	16 13	16 05
2	17 47	17 36	17 25	17 13	17 05	16 57	16 47	16 36	16 30	16 25	16 18	16 11	16 02
3	17 47	17 36	17 25	17 12	17 04	16 56	16 46	16 34	16 29	16 23	16 16	16 08	16 00
4	17 47	17 36	17 24	17 11	17 03	16 55	16 45	16 33	16 27	16 21	16 14	16 06	15 57
5	17 47	17 36	17 24	17 10	17 02	16 54	16 43	16 31	16 25	16 19	16 12	16 04	15 55
6	17 47	17 36	17 23	17 10	17 02	16 53	16 42	16 29	16 23	16 17	16 10	16 01	15 52
7	17 47	17 35	17 23	17 09	17 01	16 52	16 41	16 28	16 22	16 15	16 08	15 59	15 50
8	17 47	17 35	17 23	17 08	17 00	16 51	16 39	16 26	16 20	16 13	16 06	15 57	15 47
9	17 47	17 35	17 22	17 08	16 59	16 50	16 38	16 25	16 18	16 12	16 04	15 55	15 45
10	17 47	17 35	17 22	17 07	16 58	16 49	16 37	16 23	16 17	16 10	16 02	15 53	15 42
11	17 48	17 35	17 22	17 06	16 58	16 48	16 36	16 22	16 15	16 08	16 00	15 51	15 40
12	17 48	17 35	17 21	17 06	16 57	16 47	16 35	16 20	16 14	16 06	15 58	15 49	15 38
13	17 48	17 35	17 21	17 05	16 56	16 46	16 34	16 19	16 12	16 05	15 56	15 47	15 36
14	17 48	17 35	17 21	17 05	16 55	16 45	16 33	16 18	16 11	16 03	15 55	15 45	15 33
15	17 48	17 35	17 20	17 04	16 55	16 44	16 32	16 16	16 09	16 02	15 53	15 43	15 31
16	17 48	17 35	17 20	17 04	16 54	16 43	16 31	16 15	16 08	16 00	15 51	15 41	15 29
17	17 49	17 35	17 20	17 03	16 54	16 43	16 30	16 14	16 07	15 58	15 49	15 39	15 27
18	17 49	17 35	17 20	17 03	16 53	16 42	16 29	16 13	16 05	15 57	15 48	15 37	15 25
19	17 49	17 35	17 20	17 02	16 53	16 41	16 28	16 12	16 04	15 56	15 46	15 35	15 23
20	17 49	17 35	17 20	17 02	16 52	16 41	16 27	16 11	16 03	15 54	15 45	15 34	15 21
21	17 50	17 35	17 19	17 02	16 52	16 40	16 26	16 10	16 02	15 53	15 43	15 32	15 19
22	17 50	17 35	17 19	17 01	16 51	16 39	16 25	16 09	16 00	15 52	15 42	15 30	15 17
23	17 50	17 35	17 19	17 01	16 51	16 39	16 25	16 08	15 59	15 50	15 40	15 29	15 15
24	17 50	17 35	17 19	17 01	16 50	16 38	16 24	16 07	15 58	15 49	15 39	15 27	15 14
25	17 51	17 35	17 19	17 00	16 50	16 38	16 23	16 06	15 57	15 48	15 38	15 26	15 12
26	17 51	17 35	17 19	17 00	16 50	16 37	16 23	16 05	15 56	15 47	15 37	15 24	15 10

ENDING OF EVENING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Oct. 17	18 58	18 52	18 49	18 47	18 47	18 48	18 50	18 52	18 54	18 56	18 58	19 01	19 04
27	18 58	18 49	18 43	18 38	18 36	18 35	18 34	18 34	18 35	18 36	18 36	18 37	18 38
Nov. 6	18 59	18 48	18 39	18 31	18 28	18 24	18 22	18 20	18 19	18 18	18 17	18 17	18 16
16	19 01	18 48	18 36	18 26	18 22	18 17	18 13	18 08	18 06	18 04	18 03	18 01	17 59
26	19 05	18 50	18 36	18 24	18 18	18 13	18 07	18 00	17 58	17 55	17 52	17 50	17 46

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

LOCAL MEAN TIME OF SUNRISE (SUN'S UPPER LIMB), AND BEGINNING OF MORNING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
Nov. 26	05 44 05	05 59 06	15 06 34 06	45 06 57 07	12 07 29 07	38 07 47 07	57 08 10 08	24 08 26 08	28 08 30 08	32 08 34 08	36 08 38 08	40 08 42 08	44 08 46 08
27	05 44 06	06 00 06	16 06 35 06	46 06 58 07	13 07 31 07	39 07 49 07	58 08 11 08	25 08 27 08	29 08 31 08	33 08 35 08	37 08 39 08	41 08 43 08	45 08 47 08
28	05 44 06	06 03 06	17 06 36 06	47 06 59 07	14 07 32 07	41 07 50 08	01 08 14 08	26 08 28 08	30 08 32 08	34 08 36 08	38 08 40 08	42 08 44 08	46 08 48 08
29	05 45 06	06 01 06	17 06 36 06	48 07 00 07	15 07 34 07	42 07 52 08	03 08 15 08	27 08 30 08	31 08 34 08	35 08 38 08	39 08 42 08	43 08 46 08	47 08 50 08
30	05 45 06	06 01 06	18 06 37 06	48 07 01 07	17 07 35 07	44 07 54 08	05 08 17 08	29 08 33 08	33 08 37 08	37 08 41 08	41 08 45 08	45 08 49 08	49 08 53 08
Dec. 1	05 45 06	06 02 06	19 06 38 06	49 07 02 07	18 07 36 07	45 07 55 08	06 08 19 08	30 08 34 08	34 08 38 08	38 08 42 08	42 08 46 08	46 08 50 08	50 08 54 08
2	05 46 06	06 02 06	19 06 39 06	50 07 03 07	19 07 38 07	47 07 57 08	08 08 21 08	32 08 36 08	36 08 40 08	40 08 44 08	44 08 48 08	48 08 52 08	52 08 56 08
3	05 46 06	06 03 06	20 06 40 06	51 07 04 07	20 07 39 07	48 07 58 08	09 08 22 08	33 08 37 08	37 08 41 08	41 08 45 08	45 08 49 08	49 08 53 08	53 08 57 08
4	05 47 06	06 03 06	21 06 41 06	52 07 05 07	21 07 40 07	49 08 00 08	11 08 25 08	35 08 39 08	39 08 43 08	43 08 47 08	47 08 51 08	51 08 55 08	55 08 59 08
5	05 47 06	06 04 06	21 06 41 06	53 07 06 07	22 07 41 07	51 08 01 08	13 08 26 08	37 08 40 08	41 08 44 08	45 08 48 08	49 08 52 08	53 08 56 08	57 08 60 08
6	05 47 06	06 04 06	22 06 42 06	54 07 07 07	23 07 43 07	52 08 02 08	14 08 28 08	38 08 41 08	42 08 45 08	46 08 49 08	50 08 53 08	54 08 57 08	58 08 61 08
7	05 48 06	06 05 06	22 06 43 06	55 07 08 07	24 07 44 07	53 08 04 08	16 08 29 08	39 08 42 08	43 08 46 08	47 08 50 08	51 08 54 08	55 08 58 08	59 08 62 08
8	05 48 06	06 05 06	23 06 44 06	55 07 09 07	25 07 45 07	54 08 05 08	17 08 31 08	40 08 43 08	44 08 47 08	48 08 51 08	52 08 55 08	56 08 59 08	60 08 63 08
9	05 49 06	06 06 06	24 06 44 06	56 07 10 07	26 07 46 07	56 08 06 08	18 08 32 08	41 08 44 08	45 08 48 08	49 08 52 08	53 08 56 08	57 08 60 08	61 08 64 08
10	05 49 06	06 06 06	24 06 45 06	57 07 11 07	27 07 47 07	57 08 07 08	19 08 34 08	42 08 45 08	46 08 49 08	50 08 53 08	54 08 57 08	58 08 61 08	62 08 65 08
11	05 50 06	06 07 06	25 06 46 06	58 07 12 07	28 07 48 07	58 08 09 08	21 08 35 08	43 08 46 08	47 08 50 08	51 08 54 08	55 08 58 08	59 08 62 08	63 08 66 08
12	05 50 06	06 07 06	25 06 46 06	58 07 12 07	29 07 49 07	59 08 10 08	22 08 36 08	44 08 47 08	48 08 51 08	52 08 55 08	56 08 59 08	60 08 63 08	64 08 67 08
13	05 51 06	06 08 06	26 06 47 06	59 07 13 07	30 07 50 07	00 08 11 08	23 08 37 08	45 08 48 08	49 08 52 08	53 08 56 08	57 08 60 08	61 08 64 08	65 08 68 08
14	05 51 06	06 08 06	27 06 48 07	00 07 14 07	31 07 51 08	01 08 12 08	24 08 38 08	46 08 49 08	50 08 53 08	54 08 57 08	58 08 61 08	62 08 65 08	66 08 69 08
15	05 52 06	06 09 06	27 06 48 07	01 07 15 07	31 07 52 08	02 08 13 08	25 08 39 08	47 08 50 08	51 08 54 08	55 08 58 08	59 08 62 08	63 08 66 08	67 08 70 08
16	05 52 06	06 09 06	28 06 49 07	01 07 15 07	32 07 53 08	03 08 13 08	26 08 40 08	48 08 51 08	52 08 55 08	56 08 59 08	60 08 63 08	64 08 67 08	68 08 71 08
17	05 52 06	06 10 06	28 06 50 07	02 07 16 07	33 07 53 08	03 08 14 08	27 08 41 08	49 08 52 08	53 08 56 08	57 08 60 08	61 08 64 08	65 08 68 08	69 08 72 08
18	05 53 06	06 10 06	29 06 50 07	02 07 17 07	33 07 54 08	04 08 15 08	28 08 42 08	50 08 53 08	54 08 57 08	58 08 61 08	62 08 65 08	66 08 69 08	70 08 73 08
19	05 53 06	06 11 06	29 06 51 07	03 07 17 07	34 07 55 08	05 08 16 08	29 08 43 08	51 08 54 08	55 08 58 08	59 08 62 08	63 08 66 08	67 08 70 08	71 08 74 08
20	05 54 06	06 11 06	30 06 51 07	04 07 18 07	35 07 55 08	05 08 16 08	29 08 44 08	52 08 55 08	56 08 59 08	60 08 63 08	64 08 67 08	68 08 71 08	72 08 75 08
21	05 54 06	06 12 06	30 06 52 07	04 07 18 07	35 07 56 08	06 08 17 08	30 08 45 08	53 08 56 08	57 08 60 08	61 08 64 08	65 08 68 08	69 08 72 08	73 08 76 08
22	05 55 06	06 12 06	31 06 52 07	05 07 19 07	36 07 56 08	06 08 18 08	30 08 45 08	54 08 57 08	58 08 61 08	62 08 65 08	66 08 69 08	70 08 73 08	74 08 77 08
23	05 55 06	06 13 06	31 06 53 07	05 07 19 07	36 07 57 08	07 08 18 08	31 08 46 08	55 08 58 08	59 08 62 08	63 08 66 08	67 08 70 08	71 08 74 08	75 08 78 08
24	05 56 06	06 13 06	32 06 53 07	06 07 20 07	37 07 57 08	07 08 18 08	31 08 46 08	56 08 59 08	60 08 63 08	64 08 67 08	68 08 71 08	72 08 75 08	76 08 79 08
25	05 56 06	06 14 06	32 06 54 07	06 07 20 07	37 07 58 08	08 08 19 08	31 08 46 08	57 08 60 08	61 08 64 08	65 08 68 08	69 08 72 08	73 08 76 08	77 08 80 08
26	05 57 06	06 14 06	33 06 54 07	06 07 21 07	37 07 58 08	08 08 19 08	32 08 47 08	58 08 61 08	62 08 65 08	66 08 69 08	70 08 73 08	74 08 77 08	78 08 81 08
27	05 57 06	06 15 06	33 06 54 07	07 07 21 07	38 07 58 08	08 08 19 08	32 08 47 08	59 08 62 08	63 08 66 08	67 08 70 08	71 08 74 08	75 08 78 08	79 08 82 08
28	05 58 06	06 15 06	34 06 55 07	07 07 21 07	38 07 58 08	08 08 19 08	32 08 47 08	60 08 63 08	64 08 67 08	68 08 71 08	72 08 75 08	76 08 79 08	80 08 83 08
29	05 58 06	06 16 06	34 06 55 07	07 07 21 07	38 07 59 08	08 08 19 08	32 08 47 08	61 08 64 08	65 08 68 08	69 08 72 08	73 08 76 08	77 08 80 08	81 08 84 08
30	05 59 06	06 16 06	34 06 56 07	08 07 22 07	38 07 59 08	08 08 20 08	32 08 47 08	62 08 65 08	66 08 70 08	70 08 74 08	74 08 78 08	78 08 82 08	82 08 86 08
31	05 59 06	06 17 06	35 06 56 07	08 07 22 07	38 07 59 08	08 08 20 08	32 08 47 08	63 08 66 08	67 08 71 08	71 08 75 08	75 08 79 08	79 08 83 08	83 08 87 08
32	06 00 06	06 17 06	35 06 56 07	08 07 22 07	38 07 59 08	08 08 20 08	32 08 47 08	64 08 67 08	68 08 72 08	72 08 76 08	76 08 80 08	80 08 84 08	84 08 88 08

BEGINNING OF MORNING TWILIGHT.

	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m
Nov. 26	04	30	04	45	04	58	05	10	05	16	05	22	05	27	05	33	05	36
Dec. 6	04	33	04	49	05	04	05	17	05	24	05	30	05	37	05	43	05	48
16	04	37	04	54	05	09	05	23	05	30	05	37	05	45	05	53	05	57
26	04	42	04	59	05	14	05	29	05	36	05	43	05	51	05	59	06	02
32	04	45	05	02	05	17	05	31	05	38	05	45	05	52	06	00	06	03

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

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LOCAL MEAN TIME OF SUNSET (SUN'S UPPER LIMB), AND ENDING OF EVENING TWILIGHT, MERIDIAN OF GREENWICH, 1928.

Lat.	c°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
Nov. 26	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
27	17 51	17 55	17 19	17 00	16 50	16 37	16 23	16 05	15 56	15 47	15 37	15 24	15 10
28	17 51	17 36	17 19	17 00	16 49	16 37	16 22	16 04	15 56	15 46	15 35	15 23	15 09
29	17 52	17 36	17 19	17 00	16 49	16 36	16 21	16 03	15 54	15 44	15 33	15 21	15 06
30	17 52	17 36	17 19	17 00	16 49	16 36	16 21	16 02	15 53	15 43	15 32	15 19	15 04
Dec. 1	17 53	17 36	17 19	17 00	16 48	16 36	16 20	16 01	15 52	15 43	15 31	15 18	15 03
2	17 53	17 37	17 20	17 00	16 48	16 35	16 20	16 01	15 52	15 42	15 30	15 17	15 02
3	17 54	17 37	17 20	17 00	16 48	16 35	16 20	16 00	15 51	15 41	15 30	15 16	15 01
4	17 54	17 37	17 20	17 00	16 48	16 35	16 19	16 00	15 51	15 40	15 29	15 15	15 00
5	17 54	17 38	17 20	17 00	16 48	16 35	16 19	15 59	15 50	15 40	15 28	15 15	14 59
6	17 55	17 38	17 20	17 00	16 48	16 35	16 19	15 59	15 50	15 39	15 28	15 14	14 58
7	17 55	17 38	17 20	17 00	16 48	16 35	16 19	15 59	15 49	15 39	15 27	15 13	14 57
8	17 56	17 39	17 21	17 00	16 48	16 35	16 18	15 59	15 49	15 38	15 26	15 13	14 56
9	17 56	17 39	17 21	17 00	16 48	16 35	16 18	15 58	15 49	15 38	15 26	15 12	14 55
10	17 57	17 39	17 21	17 01	16 49	16 35	16 18	15 58	15 49	15 38	15 26	15 12	14 55
11	17 57	17 40	17 22	17 01	16 49	16 35	16 18	15 58	15 49	15 38	15 25	15 11	14 54
12	17 58	17 40	17 22	17 01	16 49	16 35	16 19	15 58	15 49	15 38	15 25	15 11	14 54
13	17 58	17 41	17 22	17 01	16 49	16 35	16 19	15 58	15 49	15 38	15 25	15 11	14 54
14	17 58	17 41	17 23	17 02	16 50	16 35	16 19	15 58	15 49	15 38	15 25	15 10	14 53
15	17 59	17 42	17 23	17 02	16 50	16 36	16 19	15 59	15 49	15 38	15 25	15 10	14 53
16	17 59	17 42	17 24	17 02	16 50	16 36	16 19	15 59	15 49	15 38	15 25	15 10	14 53
17	18 00	17 42	17 24	17 03	16 50	16 36	16 20	15 59	15 49	15 38	15 25	15 11	14 53
18	18 00	17 43	17 24	17 03	16 51	16 37	16 20	15 59	15 49	15 38	15 25	15 11	14 53
19	18 01	17 43	17 25	17 04	16 51	16 37	16 20	16 00	15 50	15 38	15 26	15 11	14 53
20	18 01	17 44	17 25	17 04	16 52	16 38	16 21	16 00	15 50	15 39	15 26	15 11	14 54
21	18 02	17 44	17 26	17 05	16 52	16 38	16 21	16 00	15 50	15 39	15 27	15 12	14 54
22	18 02	17 45	17 26	17 05	16 53	16 39	16 22	16 01	15 51	15 40	15 27	15 12	14 55
23	18 03	17 45	17 27	17 06	16 53	16 39	16 22	16 01	15 51	15 40	15 28	15 13	14 55
24	18 03	17 46	17 27	17 06	16 54	16 40	16 23	16 02	15 52	15 41	15 28	15 13	14 56
25	18 04	17 47	17 28	17 07	16 54	16 40	16 23	16 03	15 53	15 42	15 29	15 14	14 57
26	18 04	17 47	17 29	17 07	16 55	16 41	16 24	16 03	15 53	15 42	15 30	15 15	14 58
27	18 05	17 48	17 29	17 08	16 56	16 41	16 25	16 04	15 54	15 43	15 30	15 16	14 58
28	18 05	17 48	17 30	17 08	16 56	16 42	16 25	16 05	15 55	15 44	15 31	15 17	14 59
29	18 06	17 49	17 30	17 09	16 57	16 43	16 26	16 06	15 56	15 45	15 32	15 18	15 01
30	18 06	17 49	17 31	17 10	16 58	16 44	16 27	16 07	15 57	15 46	15 33	15 19	15 02
31	18 07	17 50	17 31	17 10	16 58	16 44	16 28	16 08	15 58	15 47	15 34	15 20	15 03
32	18 07	17 50	17 32	17 11	16 59	16 45	16 29	16 08	15 59	15 48	15 36	15 21	15 05

ENDING OF EVENING TWILIGHT.

	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Nov. 26	19 05	18 50	18 36	18 24	18 18	18 13	18 07	18 00	17 58	17 55	17 52	17 50	17 46
Dec. 6	19 10	18 53	18 39	18 25	18 18	18 12	18 04	17 57	17 54	17 51	17 47	17 44	17 40
16	19 15	18 58	18 42	18 28	18 21	18 14	18 06	17 58	17 55	17 51	17 47	17 43	17 39
26	19 20	19 03	18 47	18 33	18 26	18 19	18 11	18 03	17 59	17 56	17 52	17 48	17 44
32	19 22	19 06	18 51	18 37	18 30	18 23	18 15	18 08	18 04	18 01	17 57	17 53	17 49

To obtain the standard time at any station, increase the local time by the number of minutes the station is west of the standard meridian, or decrease the local time by the number of minutes the station is east of the standard meridian. For southern latitudes see page 602.

SUNRISE AND SUNSET.

SUNRISE, SUNSET AND TWILIGHT FOR SOUTHERN LATITUDES, 1928.

In the case of a southern latitude, the time of sunrise, sunset, or beginning or ending of twilight is taken from the Main Table, with the corresponding northern latitude, not for the given date but for a date about six months earlier or later, which is to be found in the following table. The time taken from the Main Table must be corrected by the quantity given in the Auxiliary Table on the same line with the given date.

Example.—May 4, 1928, in latitude 38° S., required the times of sunrise, sunset, and beginning and ending of twilight

The Auxiliary Table gives November 6 as the corresponding date, northern latitude, while the correction is $+13^m$.

	Beginning of Twilight.	Sunrise.	Sunset.	Ending of Twilight.
	h m	h m	h m	h m
Main Table, Lat. 38° N., Nov. 6...	05 01	06 30	16 57	18 25
Auxiliary Table ...	+13	+13	+13	+13
Local mean time, May 4 ...	05 14	06 43	17 10	18 38

Given Date.	Corresponding Date, Northern Latitude.	Correction.	Given Date.	Corresponding Date, Northern Latitude.	Correction.	Given Date.	Corresponding Date, Northern Latitude.	Correction.	Given Date.	Corresponding Date, Northern Latitude.	Correction.
Jan. 1	June 30	- 1	Feb. 5	Aug. 8	+ 9	Mar. 12	Sept. 14	+14	Apr. 17	Oct. 20	+15
2	July 1	0	6	9	9	13	15	14	18	21	15
3	2	0	7	10	9	14	16	14	19	22	15
4	3	0	8	11	9	15	17	15	20	23	15
5	4	0	9	12	9	16	18	15	21	24	14
6	5	+ 1	10	13	+10	17	19	+15	22	25	+14
7	6	1	11	14	10	18	20	15	23	26	14
8	7	1	12	15	10	19	21	15	24	27	14
9	8	1	13	16	10	20	22	15	25	28	14
10	9	2	14	17	10	21	23	15	26	29	14
11	10	+ 2	15	18	+11	22	24	+15	27	30	+14
12	11	2	16	19	11	23	25	15	28	31	14
13	12	3	17	20	11	24	26	15	29	Nov. 1	14
14	13	3	18	21	11	25	27	15	30	2	14
15	14	3	19	22	11	26	29	15	May 1	3	13
16	15	+ 3	20	23	+12	27	30	+15	2	4	+13
17	16	4	21	24	12	28	Oct. 1	15	3	5	13
18	17	4	22	25	12	29	2	15	4	6	13
19	18	4	23	26	12	30	3	16	5	7	13
20	19	4	24	27	12	31	4	16	6	8	13
21	20	+ 5	25	28	+12	Apr. 1	5	+16	7	9	+13
22	21	5	26	29	13	2	6	16	8	10	12
23	22	5	27	30	13	3	7	15	9	11	12
24	23	5	28	Sept. 1	13	4	8	15	10	12	12
25	24	6	29	2	13	5	9	15	11	13	12
26	25	+ 6	Mar 1	3	+13	6	10	+15	12	14	+12
27	26	6	2	4	13	7	11	15	13	15	12
28	27	6	3	5	13	8	12	15	14	16	11
29	28	7	4	6	14	9	13	15	15	17	11
30	29	7	5	7	14	10	14	15	16	18	11
31	30	+ 7	6	8	+14	11	15	+15	17	19	+11
Feb 1	Jan 1	8	7	9	14	12	16	15	18	20	11
2	2	8	8	10	14	13	17	15	19	21	10
3	3	8	9	11	14	14	18	15	20	22	10
4	4	+ 8	10	12	+14	15	19	+15	21	23	+10

SUNRISE AND SUNSET.

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SUNRISE, SUNSET AND TWILIGHT FOR SOUTHERN LATITUDES, 1928.

Given Date.	Corresponding Date, Northern Latitude.	Correc-tion.	Given Date.	Corresponding Date, Northern Latitude.	Correc-tion.	Given Date.	Corresponding Date, Northern Latitude.	Correc-tion.	Given Date.	Corresponding Date, Northern Latitude.	Correc-tion.
May 23	Nov. 22	+10	July 18	Jan. 16	-4	Sept. 12	Mar. 10	-14	Nov. 7	May 5	-13
24	23	10	19	17	4	13	11	14	8	6	13
25	24	9	20	18	4	14	12	14	9	7	13
26	25	9	21	19	4	15	13	14	10	8	12
27	26	9	22	20	5	16	14	14	11	9	12
28	27	+9	23	21	-5	17	15	-15	12	10	-12
29	28	9	24	22	5	18	16	-15	13	11	12
30	29	8	25	23	5	19	17	15	14	12	12
31	30	8	26	24	6	20	18	15	15	13	12
June 1	1	8	27	25	6	21	19	15	16	14	11
2	2	+8	28	26	-6	22	20	-15	17	16	-11
3	3	7	29	27	6	23	21	15	18	17	11
4	4	7	30	28	7	24	22	15	19	18	11
5	5	7	31	29	7	25	23	15	20	19	11
6	6	7	Aug. 1	30	7	26	24	15	21	20	10
7	7	+7	2	31	-7	27	25	-15	22	21	-10
8	8	6	3	31	8	28	25	15	23	22	10
9	9	6	4	Feb. 1	8	29	26	15	24	23	10
10	10	6	5	2	8	30	27	15	25	24	10
11	11	6	6	3	8	Oct. 1	28	15	26	25	9
12	12	+5	7	4	-8	2	29	-15	27	26	-9
13	13	5	8	5	9	3	30	16	28	27	9
14	14	5	9	6	9	4	31	16	29	28	9
15	15	5	10	7	9	5	Apr. 1	16	30	29	9
16	16	4	11	8	9	6	2	16	Dec 1	30	8
17	17	+4	12	9	-9	7	3	-15	2	31	-8
18	18	4	13	10	10	8	4	15	3	June 1	8
19	19	3	14	11	10	9	5	15	4	2	8
20	20	3	15	12	10	10	6	15	5	3	7
21	21	3	16	13	10	11	7	15	6	4	7
22	22	+3	17	14	-10	12	9	-15	7	5	7
23	23	3	18	15	11	13	10	15	8	6	7
24	24	3	19	16	11	14	11	15	9	7	6
25	25	2	20	17	11	15	12	15	10	8	6
26	26	2	21	18	11	16	13	15	11	9	6
27	27	+2	22	19	-11	17	14	-15	12	10	-6
28	28	1	23	19	11	18	15	15	13	11	5
29	29	1	24	20	12	19	16	15	14	12	5
30	30	1	25	21	12	20	17	15	15	13	5
July 1	Dec. 31	1	26	22	12	21	18	15	16	14	5
2	Jan. 1	+1	27	23	-12	22	19	-15	17	15	-4
3	2	0	28	24	12	23	20	15	18	16	4
4	3	0	29	25	12	24	21	14	19	17	4
5	4	0	30	26	13	25	22	14	20	18	4
6	5	-1	31	27	13	26	23	14	21	19	3
7	6	-1	Sept. 1	28	-13	27	24	-14	22	20	-3
8	7	1	2	29	13	28	25	14	23	21	3
9	8	1	3	Mar. 1	13	29	26	14	24	22	3
10	9	2	4	2	13	30	27	14	25	23	2
11	10	2	5	3	13	31	28	14	26	24	2
12	11	-2	6	4	-14	Nov. 1	29	-14	27	25	-2
13	12	3	7	5	14	2	30	14	28	26	1
14	13	3	8	6	14	3	May 1	13	29	27	1
15	14	3	9	7	14	4	2	13	30	28	1
16	15	3	10	8	14	5	3	13	31	29	1
17	16	-4	11	9	-14	6	4	-13	32	30	0

MOONRISE AND MOONSET.

LOCAL MEAN TIME OF MOONRISE (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.		5°	10°	20°	30°	35°	40°	45°	50°	52°	54°	56°	58°	60°
Date.														
Jan.	0	12 57 2	07 12 08	12 09 12 09	12 10 12 10	12 10 12 11	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12	12 12 12 12	12 13 12 13	
	1	12 56 12	52 12 48	12 43 12 41	12 38 12 34	12 30 12 28	12 26 12 24	12 24 12 22	12 19					
	2	12 45 13	38 13 29	13 22 13 14	13 08 13 00	12 51 12 47	12 43 12 38	12 33 12 26						
	3	14 42 14	28 14 14	13 59 13 51	13 41 13 32	13 16 13 10	13 03 12 55	12 46 12 36						
	4	15 37 15	21 15 04	14 44 14 33	14 20 14 05	13 47 13 38	13 28 13 18	13 05 12 51						
	5	15 36 16	18 15 58	15 36 15 22	15 07 14 49	14 26 14 16	14 04 13 50	13 34 13 15						
	6	17 57 17	18 16 57	16 33 16 18	16 02 15 42	15 18 15 06	14 53 14 37	14 19 13 56						
	7	18 38 18	18 17 58	17 34 17 20	17 04 16 45	16 21 16 09	15 56 15 41	15 23 15 01						
	8	19 53 19	18 18 50	18 38 18 25	18 11 17 54	17 33 17 22	17 11 16 58	16 42 16 24						
	9	20 28 20	14 19 58	19 41 19 30	19 18 19 04	18 47 18 39	18 30 18 20	18 08 17 55						
	10	21 17 21	06 20 54	20 41 20 33	20 24 20 14	20 01 19 55	19 49 19 42	19 33 19 24						
	11	22 02 21	55 21 47	21 38 21 33	21 28 21 21	21 13 21 09	21 05 21 00	20 55 20 50						
	12	22 41 22	41 22 38	22 34 22 31	22 28 22 26	22 22 22 20	22 18 22 16	22 14 22 11						
	13	23 25 23	26 23 26	23 27 23 27	23 28 23 28	23 29 23 29	23 29 23 30	23 30 23 30						
	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	15	00 00 00	10 00 14	00 20 00 23	00 26 00 30	00 35 00 37	00 39 00 42	00 45 00 48						
	16	00 47 00	55 01 03	01 13 01 18	01 25 01 32	01 41 01 45	01 50 01 55	02 01 02 07						
	17	01 20 01	41 01 53	02 07 02 15	02 24 02 35	02 48 02 54	03 01 03 09	03 18 03 28						
	18	02 14 02	2 02 44	02 03 13	02 25 03 39	03 56 04 04	04 14 04 24	04 36 04 50						
	19	03 02 03	19 03 38	03 59 04 11	04 26 04 43	05 04 05 14	05 26 05 39	05 54 06 12						
	20	03 54 04	13 04 33	04 56 05 10	05 26 05 45	06 09 06 21	06 34 06 49	07 07 07 29						
	21	04 47 05	07 05 28	05 52 06 07	06 23 06 43	07 08 07 20	07 34 07 50	08 08 08 32						
	22	05 43 06	02 06 22	06 49 07 00	07 16 07 34	07 58 08 10	08 22 08 37	08 55 09 16						
	23	06 38 06	55 07 14	07 35 07 47	08 01 08 18	08 38 08 48	08 59 09 11	09 25 09 42						
	24	07 33 07	47 08 02	08 19 08 29	08 40 08 51	09 10 09 18	09 26 09 36	09 46 09 58						
	25	08 25 08	35 08 46	08 50 09 06	09 15 09 24	09 36 09 41	09 47 09 54	10 01 10 09						
	26	09 15 09	29 09 28	09 36 09 40	09 45 09 51	09 58 10 01	10 04 10 08	10 12 10 17						
	27	10 04 10	09 10 08	10 10 10 12	10 13 10 15	10 17 10 18	10 19 10 20	10 22 10 23						
	28	10 53 10	51 10 48	10 45 10 43	10 41 10 39	10 36 10 35	10 34 10 32	10 31 10 29						
	29	11 43 11	39 11 28	11 20 11 15	11 10 11 04	10 56 10 53	10 49 10 45	10 41 10 35						
Feb.	30	12 35 12	23 12 11	11 58 11 50	11 41 11 31	11 19 11 13	11 07 11 00	10 53 10 44						
	31	13 29 13	14 12 58	12 40 12 29	12 17 12 03	11 46 11 39	11 30 11 20	11 09 10 56						
	1	14 20 14	08 13 49	13 27 13 15	13 00 12 43	12 22 12 12	12 00 11 48	11 35 11 15						
	2	15 11 15	05 14 44	14 21 14 07	13 50 13 31	13 07 12 56	12 42 12 27	12 10 11 48						
	3	16 04 16	04 15 43	15 19 15 05	14 48 14 29	14 04 13 52	13 39 13 23	13 04 12 41						
	4	17 01 17	03 16 43	16 21 16 08	15 53 15 34	15 12 15 01	14 48 14 34	14 17 13 57						
	5	18 16 18	00 17 44	17 24 17 13	17 00 16 44	16 25 16 16	16 06 15 54	15 41 15 25						
	6	19 07 18	51 18 41	18 29 18 17	18 07 17 54	17 40 17 33	17 25 17 17	17 07 16 56						
	7	19 54 19	45 19 36	19 25 19 18	19 11 19 03	18 53 18 48	18 43 18 38	18 31 18 24						
	8	20 38 20	33 20 28	20 22 20 18	20 14 20 10	20 04 20 02	19 59 19 56	19 52 19 48						
	9	21 22 21	19 21 17	21 16 21 16	21 15 21 14	21 12 21 12	21 11 21 11	21 10 21 09						
	10	22 01 22	04 22 06	22 10 22 10	22 12 22 14	22 17 22 20	22 21 22 23	22 25 22 27						
	11	22 41 22	48 22 55	23 03 23 07	23 13 23 19	23 26 23 30	23 33 23 38	23 42 23 48						
	12	23 23 23	33 23 44	23 56	.....	.....	.....	.....		
	13	.....	.....	.....	00 04 00	12 00 21 00	33 00 39 00	45 00 51 00	59 01 08					
	14	00 07 00	20 00 34	00 51 01 01	12 01 24 01	40 01 48 01	56 02 06 02	16 02 29						
	15	00 53 01	09 01 27	01 47 01 59	12 02 28 02	48 02 57 03	08 03 20 03	34 03 51						
	16	01 42 02	01 02 20	02 43 02 57	12 03 31 03	54 04 05 04	18 04 32 04	50 05 10						

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

605

LOCAL MEAN TIME OF MOONSET (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat		c°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan.	0	....	....	....	....	....	....	....	....	....	....	....	....	....
	1	00 30	00 31	00 33	00 35	00 36	00 37	00 39	00 40	00 41	00 42	00 43	00 44	00 45
	2	01 19	01 25	01 32	01 39	01 44	01 48	01 54	02 01	02 04	02 08	02 12	02 16	02 21
	3	02 11	02 22	02 33	02 46	02 53	03 02	03 12	03 24	03 29	03 36	03 42	03 50	03 59
	4	03 06	03 21	03 36	03 54	04 04	04 16	04 30	04 47	04 55	05 04	05 15	05 27	05 40
	5	04 05	04 22	04 41	05 02	05 15	05 30	05 47	06 09	06 19	06 31	06 44	07 00	07 19
	6	05 05	05 25	05 45	06 09	06 23	06 40	06 59	07 23	07 35	07 48	08 04	08 22	08 45
	7	06 06	06 26	06 47	07 11	07 25	07 42	08 01	08 26	08 37	08 51	09 06	09 24	09 47
	8	07 06	07 24	07 43	08 06	08 19	08 34	08 52	09 14	09 24	09 36	09 50	10 05	10 24
	9	08 01	08 17	08 34	08 53	09 04	09 17	09 32	09 50	09 59	10 08	10 19	10 31	10 44
	10	08 52	09 05	09 18	09 33	09 42	09 52	10 03	10 18	10 24	10 31	10 39	10 48	10 58
	11	09 39	09 48	09 58	10 08	10 14	10 22	10 30	10 39	10 44	10 48	10 54	11 00	11 07
	12	10 23	10 28	10 34	10 40	10 44	10 48	10 52	10 58	11 00	11 03	11 06	11 09	11 13
	13	11 04	11 06	11 08	11 09	11 10	11 11	11 12	11 14	11 15	11 15	11 16	11 17	11 18
	14	11 45	11 43	11 40	11 37	11 36	11 34	11 32	11 30	11 28	11 27	11 26	11 24	11 22
	15	12 26	12 20	12 13	12 06	12 02	11 57	11 52	11 45	11 42	11 39	11 35	11 31	11 27
	16	13 07	12 58	12 48	12 36	12 30	12 22	12 13	12 03	11 58	11 52	11 47	11 40	11 33
	17	13 51	13 38	13 24	13 09	13 00	12 49	12 38	12 23	12 16	12 09	12 00	11 51	11 40
	18	14 37	14 22	14 05	13 45	13 34	13 21	13 06	12 48	12 39	12 30	12 19	12 06	11 52
	19	15 27	15 09	14 50	14 27	14 14	13 59	13 42	13 20	13 09	12 58	12 44	12 28	12 10
	20	16 19	16 00	15 39	15 15	15 01	14 45	14 25	14 01	13 49	13 36	13 21	13 02	12 40
	21	17 14	16 55	16 34	16 10	15 55	15 39	15 19	14 54	14 42	14 28	14 12	13 54	13 30
	22	18 10	17 51	17 32	17 09	16 56	16 40	16 22	15 59	15 47	15 35	15 20	15 03	14 42
	23	19 05	18 49	18 32	18 12	18 00	17 47	17 31	17 12	17 03	16 52	16 40	16 26	16 10
	24	19 58	19 45	19 32	19 16	19 08	18 57	18 45	18 30	18 23	18 16	18 07	17 57	17 45
	25	20 49	20 41	20 32	20 21	20 15	20 08	20 00	19 50	19 45	19 40	19 35	19 28	19 21
	26	21 39	21 35	21 30	21 25	21 22	21 19	21 15	21 10	21 08	21 06	21 03	21 00	20 56
	27	22 28	22 28	22 28	22 29	22 29	22 29	22 30	22 30	22 30	22 30	22 30	22 30	22 31
	28	23 17	23 22	23 27	23 33	23 36	23 40	23 44	23 50	23 52	23 55	23 58	....	....
	29	....	....	....	....	....	....	....	....	....	....	....	00 02	00 05
	30	00 07	00 16	00 26	00 38	00 44	00 52	01 00	01 11	01 16	01 21	01 27	01 34	01 42
	31	01 00	01 13	01 27	01 44	01 53	02 04	02 17	02 32	02 40	02 48	02 57	03 08	03 20
Feb.	1	01 56	02 12	02 30	02 50	03 02	03 16	03 32	03 53	04 02	04 13	04 26	04 40	04 57
	2	02 54	03 12	03 33	03 56	04 10	04 26	04 44	05 08	05 19	05 32	05 47	06 05	06 26
	3	03 53	04 13	04 34	04 58	05 12	05 29	05 49	06 13	06 25	06 39	06 55	07 14	07 37
	4	04 52	05 11	05 31	05 54	06 08	06 24	06 43	07 06	07 17	07 30	07 44	08 02	08 22
	5	05 48	06 05	06 23	06 44	06 56	07 10	07 26	07 46	07 56	08 06	08 19	08 32	08 49
	6	06 41	06 55	07 10	07 27	07 37	07 48	08 01	08 17	08 24	08 33	08 42	08 52	09 04
	7	07 30	07 40	07 52	08 04	08 12	08 20	08 30	08 41	08 46	08 52	08 59	09 06	09 14
	8	08 15	08 22	08 29	08 38	08 42	08 48	08 53	09 01	09 04	09 08	09 12	09 16	09 21
	9	08 58	09 01	09 04	09 08	09 10	09 12	09 15	09 18	09 19	09 21	09 23	09 24	09 26
	10	09 40	09 39	09 38	09 37	09 36	09 35	09 35	09 34	09 33	09 33	09 32	09 32	09 31
	11	10 20	10 16	10 11	10 05	10 02	09 58	09 54	09 49	09 47	09 44	09 42	09 39	09 36
	12	11 02	10 53	10 45	10 35	10 29	10 22	10 15	10 06	10 02	09 57	09 52	09 47	09 40
	13	11 44	11 32	11 20	11 06	10 58	10 49	10 38	10 25	10 19	10 12	10 05	09 56	09 47
	14	12 29	12 14	11 59	11 41	11 30	11 18	11 04	10 47	10 39	10 30	10 20	10 09	09 56
	15	13 17	13 00	12 41	12 20	12 07	11 53	11 36	11 16	11 06	10 55	10 42	10 28	10 10
	16	14 07	13 48	13 28	13 04	12 51	12 35	12 16	11 52	11 41	11 28	11 13	10 55	10 34

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

LOCAL MEAN TIME OF MOONRISE (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Feb. 16	01 42	02 01	02 20	02 43	03 03	03 12	03 31	03 54	04 05	04 18	04 32	04 50	05 10
17	02 15	02 54	03 15	03 40	04 03	04 24	04 30	04 55	05 08	05 21	05 37	05 56	06 20
18	03 26	04 04	04 24	04 51	05 14	05 38	05 53	06 11	06 33	06 44	06 56	07 09	07 25
19	04 25	05 03	05 23	05 50	06 13	06 36	06 50	07 07	07 27	07 38	07 50	08 04	08 20
20	05 20	05 58	06 18	06 45	07 08	07 31	07 45	08 02	08 21	08 32	08 44	08 58	09 14
21	06 13	06 51	07 11	07 38	08 01	08 24	08 38	08 55	09 14	09 25	09 37	09 51	10 07
22	07 07	07 45	08 05	08 32	08 55	09 18	09 32	09 49	10 08	10 19	10 31	10 45	11 01
23	07 58	08 36	08 56	09 23	09 46	10 09	10 23	10 40	10 59	11 10	11 22	11 36	11 52
24	08 48	09 26	09 46	10 13	10 36	10 59	11 13	11 30	11 49	12 00	12 12	12 26	12 42
25	09 39	10 17	10 37	11 04	11 27	11 50	12 04	12 21	12 40	12 51	13 03	13 17	13 33
26	10 31	11 09	11 29	11 56	12 19	12 42	12 56	13 13	13 32	13 43	13 55	14 09	14 25
27	11 25	12 03	12 23	12 50	13 13	13 36	13 50	14 07	14 26	14 37	14 49	15 03	15 19
28	12 21	12 59	13 19	13 46	14 09	14 32	14 46	15 03	15 22	15 33	15 45	15 59	16 15
29	13 19	13 57	14 17	14 44	15 07	15 30	15 44	16 01	16 20	16 31	16 43	16 57	17 13
Mar 1	14 17	14 55	15 15	15 42	16 05	16 28	16 42	17 00	17 19	17 30	17 42	17 56	18 12
2	15 14	15 52	16 12	16 39	17 02	17 25	17 39	17 56	18 15	18 26	18 38	18 52	19 08
3	16 09	16 47	17 07	17 34	17 57	18 20	18 34	18 51	19 10	19 21	19 33	19 47	20 03
4	17 02	17 40	18 00	18 27	18 50	19 13	19 27	19 44	20 03	20 14	20 26	20 40	20 56
5	17 48	18 26	18 46	19 13	19 36	19 59	20 13	20 30	20 49	20 60	21 02	21 16	21 32
6	18 32	19 10	19 30	19 57	20 20	20 43	20 57	21 14	21 33	21 44	21 56	22 10	22 26
7	19 15	19 53	20 13	20 40	21 03	21 26	21 40	21 57	22 16	22 27	22 39	22 53	23 09
8	19 56	20 34	20 54	21 21	21 44	22 07	22 21	22 38	22 57	23 08	23 20	23 34	23 50
9	20 37	21 15	21 35	22 02	22 25	22 48	23 02	23 19	23 38	23 49	24 01	24 15	24 31
10	21 18	21 56	22 16	22 43	23 06	23 29	23 43	24 00	24 19	24 30	24 42	24 56	25 12
11	22 01	22 39	22 59	23 26	23 49	24 12	24 26	24 43	25 02	25 13	25 25	25 39	25 55
12	22 46	23 24	23 44	24 11	24 34	24 57	25 11	25 28	25 47	25 58	26 10	26 24	26 40
13	23 34	24 12	24 32	25 00	25 23	25 46	26 00	26 17	26 36	26 47	26 59	27 13	27 29
14	...	...	...	...	...	...	...	...	...	...	...	...	...
15	00 24	01 02	01 22	01 49	02 12	02 35	02 49	03 06	03 25	03 36	03 48	03 62	03 78
16	01 16	01 54	02 14	02 41	03 04	03 27	03 41	03 58	04 17	04 28	04 40	04 54	05 10
17	02 11	02 49	03 09	03 36	03 59	04 22	04 36	04 53	05 12	05 23	05 35	05 49	06 05
18	03 03	03 41	04 01	04 28	04 51	05 14	05 28	05 45	06 04	06 15	06 27	06 41	06 57
19	04 00	04 38	04 58	05 25	05 48	06 11	06 25	06 42	07 01	07 12	07 24	07 38	07 54
20	04 53	05 31	05 51	06 18	06 41	07 04	07 18	07 35	07 54	08 05	08 17	08 31	08 47
21	05 45	06 23	06 43	07 10	07 33	07 56	08 10	08 27	08 46	08 57	09 09	09 23	09 39
22	06 36	07 14	07 34	08 01	08 24	08 47	09 01	09 18	09 37	09 48	09 60	10 04	10 20
23	07 28	08 06	08 26	08 53	09 16	09 39	09 53	10 10	10 29	10 40	10 52	11 06	11 22
24	08 22	09 00	09 20	09 47	10 10	10 33	10 47	11 04	11 23	11 34	11 46	11 60	11 76
25	09 17	09 55	10 15	10 42	11 05	11 28	11 42	12 00	12 19	12 30	12 42	12 56	13 12
26	10 14	10 52	11 12	11 39	12 02	12 25	12 39	12 56	13 15	13 26	13 38	13 52	14 08
27	11 13	11 51	12 11	12 38	13 01	13 24	13 38	13 55	14 14	14 25	14 37	14 51	15 07
28	12 12	12 50	13 10	13 37	14 00	14 23	14 37	14 54	15 13	15 24	15 36	15 50	16 06
29	13 10	13 48	14 08	14 35	14 58	15 21	15 35	15 52	16 11	16 22	16 34	16 48	17 04
30	14 05	14 43	15 03	15 30	15 53	16 16	16 30	16 47	17 06	17 17	17 29	17 43	17 59
31	14 57	15 35	15 55	16 22	16 45	17 08	17 22	17 39	17 58	18 09	18 21	18 35	18 51
Apr. 1	15 45	16 23	16 43	17 10	17 33	17 56	18 10	18 27	18 46	18 57	19 09	19 23	19 39

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

607

LOCAL MEAN TIME OF MOONSET (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Feb. 16	14 07	13 48	13 28	13 04	12 51	12 35	12 16	11 52	11 41	11 28	11 13	10 55	10 34
17	15 01	14 41	14 20	13 55	13 41	13 24	13 04	12 39	12 27	12 13	11 58	11 38	11 14
18	15 56	15 37	15 16	14 53	14 39	14 22	14 03	13 39	13 27	13 14	12 58	12 40	12 17
19	16 52	16 34	16 16	15 55	15 42	15 28	15 10	14 49	14 39	14 27	14 14	13 58	13 40
20	17 46	17 32	17 17	17 00	16 49	16 38	16 24	16 07	15 59	15 50	15 40	15 28	15 14
21	18 40	18 29	18 18	18 06	17 58	17 50	17 40	17 28	17 23	17 17	17 10	17 02	16 54
22	19 31	19 25	19 19	19 12	19 08	19 03	18 57	18 51	18 48	18 44	18 40	18 36	18 31
23	20 22	20 20	20 19	20 18	20 17	20 16	20 15	20 13	20 13	20 12	20 11	20 10	20 09
24	21 12	21 16	21 19	21 24	21 26	21 29	21 32	21 36	21 38	21 40	21 42	21 44	21 47
25	22 03	22 11	22 20	22 30	22 36	22 42	22 50	22 59	23 03	23 08	23 13	23 19	23 25
26	22 56	23 08	23 22	23 36	23 45	23 56	....	....	....	....	....	....	....
27	23 51	....	....	....	....	00 07	00 22	00 28	00 36	00 44	00 54	01 05	01 05
28	....	00 07	00 24	00 44	00 55	01 08	01 24	01 43	01 52	02 03	02 14	02 28	02 44
29	00 48	01 07	01 26	01 49	02 03	02 18	02 37	03 00	03 11	03 24	03 38	03 56	04 16
Mar. 1	01 47	02 06	02 28	02 52	03 06	03 23	03 43	04 08	04 20	04 34	04 50	05 09	05 32
2	02 45	03 04	03 25	03 49	04 03	04 20	04 39	05 03	05 15	05 28	05 44	06 02	06 24
3	03 41	03 59	04 18	04 40	04 53	05 08	05 25	05 46	05 57	06 08	06 21	06 36	06 54
4	04 34	04 49	05 05	05 24	05 35	05 47	06 02	06 19	06 28	06 37	06 47	06 59	07 12
5	05 25	05 35	05 48	06 02	06 11	06 20	06 31	06 45	06 51	06 58	07 05	07 14	07 23
6	06 09	06 18	06 26	06 36	06 42	06 49	06 56	07 05	07 09	07 14	07 19	07 24	07 30
7	06 53	06 57	07 02	07 07	07 10	07 14	07 18	07 23	07 25	07 27	07 30	07 32	07 36
8	07 35	07 35	07 36	07 36	07 37	07 38	07 38	07 39	07 39	07 39	07 39	07 40	07 40
9	08 16	08 12	08 09	08 05	08 03	08 00	07 58	07 54	07 52	07 51	07 49	07 46	07 44
10	08 57	08 50	08 43	08 34	08 29	08 24	08 18	08 10	08 06	08 03	07 59	07 54	07 49
11	09 39	09 28	09 17	09 05	08 57	08 49	08 39	08 28	08 22	08 16	08 10	08 02	07 54
12	10 23	10 09	09 54	09 38	09 28	09 17	09 04	08 48	08 41	08 33	08 24	08 13	08 02
13	11 09	10 52	10 35	10 14	10 03	09 49	09 33	09 14	09 04	08 54	08 42	08 29	08 13
14	11 58	11 39	11 19	10 56	10 43	10 27	10 09	09 46	09 35	09 22	09 08	08 51	08 31
15	12 49	12 29	12 08	11 44	11 29	11 13	10 52	10 27	10 15	10 02	09 45	09 26	09 02
16	13 42	13 23	13 02	12 37	12 23	12 06	11 46	11 20	11 08	10 54	10 38	10 18	09 54
17	14 37	14 18	13 59	13 36	13 22	13 07	12 48	12 25	12 14	12 01	11 46	11 29	11 08
18	15 31	15 16	14 58	14 39	14 27	14 14	13 58	13 39	13 30	13 19	13 07	12 53	12 37
19	16 25	16 13	16 00	15 44	15 35	15 25	15 13	14 59	14 52	14 44	14 36	14 26	14 15
20	17 18	17 09	17 01	16 51	16 45	16 38	16 31	16 21	16 17	16 12	16 07	16 01	15 54
21	18 09	18 06	18 02	17 58	17 56	17 53	17 50	17 46	17 44	17 42	17 40	17 37	17 34
22	19 01	19 02	19 04	19 05	19 06	19 08	19 09	19 10	19 11	19 12	19 13	19 14	19 15
23	19 53	20 00	20 06	20 14	20 19	20 23	20 29	20 36	20 40	20 43	20 48	20 52	20 57
24	20 47	20 58	21 09	21 23	21 31	21 40	21 50	22 03	22 09	22 15	22 23	22 31	22 40
25	21 44	21 59	22 15	22 33	22 44	22 56	23 11	23 29	23 37	23 47	23 57	....	....
26	22 42	23 00	23 19	23 41	23 54	....	....	....	....	....	....	00 10	00 24
27	23 41	....	....	....	....	00 10	00 28	00 50	01 01	01 13	01 27	01 44	02 03
28	....	00 01	00 22	00 47	01 01	01 18	01 38	02 03	02 15	02 29	02 45	03 04	03 28
29	00 40	01 00	01 22	01 46	02 01	02 17	02 37	03 03	03 15	03 29	03 45	04 04	04 28
30	01 37	01 56	02 16	02 39	02 52	03 08	03 26	03 49	04 00	04 12	04 26	04 43	05 02
31	02 31	02 47	03 04	03 24	03 36	03 49	04 05	04 24	04 33	04 43	04 54	05 07	05 22
Apr. 1	03 20	03 34	03 48	04 04	04 13	04 23	04 36	04 51	05 04	05 14	05 23	05 34	05 44

For other longitudes and for southern latitudes see page 620

MOONRISE AND MOONSET.

LOCAL MEAN TIME OF MOONRISE (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.														
Date.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°	
	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	<small>h m</small>	
Apr. 1	15 45 15	33 15	21 15	07 14	59 14	49 14	38 14	25 14	18 14	11 14	03 14	55 13	44 13	
2	16 30 16	22 16	14 16	04 15	58 15	52 15	45 15	36 15	32 15	27 15	22 15	17 15	10 15	
3	17 12 17	09 17	04 17	00 16	57 16	54 16	50 16	46 16	44 16	41 16	39 16	36 16	33 16	
4	17 54 17	54 17	53 17	54 17	54 17	54 17	54 17	54 17	54 17	53 17	54 17	54 17	54 17	
5	18 34 18	58 18	42 18	47 18	50 18	53 18	56 18	01 19	03 19	05 19	07 19	10 19	13 19	
6	19 15 19	23 19	31 19	40 19	46 19	52 19	59 19	08 20	12 20	17 20	22 20	27 20	33 20	
7	19 58 19	20 20	21 20	34 20	42 20	52 20	02 21	16 21	22 21	28 21	36 21	45 21	54 21	
8	20 42 20	56 21	12 21	29 21	40 21	52 21	06 22	23 22	31 22	41 22	51 22	03 23	17 23	
9	21 28 21	45 22	04 22	25 22	37 22	52 22	09 23	30 23	40 23	52 23	....	....	....
10	22 17 22	59 22	56 23	20 23	34 23	50 23	....	....	....	....	00 05	00 21	00 39
11	23 08 23	28 23	50 23	....	....	....	00 10	00 34	00 46	01 00	01 15	01 34	01 56
12	....	....	....	00 14	00 29	00 46	01 07	01 32	01 45	01 59	02 16	02 36	03 02
13	00 00 20	20 00	42 01	06 01	21 01	37 01	57 02	02 22	02 35	02 48	03 04	03 24	03 47	
14	00 54 01	12 01	32 01	54 02	07 02	23 02	41 03	03 03	14 03	26 03	40 03	56 04	04 15	
15	01 47 02	02 02	19 02	38 02	50 03	02 03	17 03	36 03	45 03	54 03	04 05	04 18	04 32	
16	02 39 02	51 03	04 03	19 03	28 03	37 03	49 04	04 03	04 09	04 16	04 24	04 33	04 42	
17	03 30 03	38 03	47 03	57 04	02 04	09 04	15 04	25 04	29 04	33 04	38 04	44 04	50 04	
18	04 21 04	25 04	29 04	33 04	35 04	38 04	41 04	45 04	47 04	49 04	51 04	53 04	56 04	
19	05 13 05	12 05	10 05	09 05	08 05	07 05	06 05	05 05	04 05	03 05	03 05	02 05	01 05	
20	06 06 06	05 05	53 05	46 05	42 05	37 05	31 05	25 05	22 05	19 05	15 05	11 05	07 05	
21	07 01 06	50 06	39 06	26 06	18 06	10 06	00 06	05 48	05 43	05 37	05 30	05 22	05 14	
22	08 00 07	44 07	20 07	10 07	00 06	48 06	34 06	16 06	08 06	05 59	05 50	05 38	05 25	
23	09 00 08	42 08	22 08	00 07	47 07	32 07	14 07	06 07	42 06	30 06	17 06	02 05	43 04	
24	10 02 09	42 09	20 08	56 08	42 08	24 08	04 07	39 07	28 07	14 07	06 58	06 39	06 16	
25	11 03 10	43 10	21 09	56 09	42 09	24 09	04 08	38 08	26 08	12 07	05 57	07 36	07 11	
26	12 00 11	42 11	22 10	59 10	45 10	29 10	10 10	09 47	09 36	09 23	09 08	08 50	08 29	
27	12 54 12	38 12	21 12	01 11	49 11	36 11	20 11	00 10	51 10	41 10	29 10	15 09	58 08	
28	13 43 13	31 13	17 13	01 12	52 12	42 12	29 12	14 12	07 11	59 11	51 11	40 11	29 11	
29	14 29 14	20 14	10 13	59 13	53 13	45 13	37 13	26 13	22 13	16 13	10 13	04 12	56 11	
30	15 12 15	07 15	01 14	55 14	51 14	47 14	42 14	36 14	34 14	31 14	27 14	23 14	19 14	
May 1	15 53 15	52 15	50 15	49 15	48 15	47 15	46 15	44 15	44 15	43 15	42 15	41 15	40 15	
2	16 34 16	36 16	39 16	42 16	44 16	46 16	48 16	51 16	53 16	54 16	56 16	58 17	00 17	
3	17 14 17	21 17	27 17	35 17	40 17	45 17	51 17	58 18	02 18	05 18	09 18	14 18	19 18	
4	17 56 18	00 18	16 18	29 18	36 18	44 18	54 19	05 19	11 19	17 19	24 19	31 19	40 19	
5	18 39 18	53 19	07 19	24 19	33 19	44 19	58 20	14 20	21 20	30 20	39 20	50 21	02 21	
6	19 25 19	41 19	59 20	19 20	31 20	45 21	01 21	21 21	31 21	42 21	54 22	08 22	26 22	
7	20 13 20	32 20	52 21	15 21	28 21	44 22	03 22	22 22	38 22	51 23	06 23	24 23	46 23	
8	21 03 21	23 21	45 22	09 22	24 22	41 23	02 23	27 23	40 23	54 23	....	....	....
9	21 55 22	15 22	37 23	02 23	17 23	34 23	54 23	....	....	....	00 11	00 31	00 56
10	22 47 23	06 23	27 23	50 23	....	....	....	00 20	00 32	00 46	01 03	01 23	01 49
11	23 39 23	56 23	....	....	00 04	00 20	00 40	01 03	01 15	01 28	01 42	02 00	02 21
12	....	....	00 14	00 35	00 47	01 01	01 18	01 38	01 47	01 58	02 10	02 24	02 40
13	00 30 00	44 00	59 01	16 01	25 01	37 01	50 02	05 02	13 02	21 02	30 02	40 02	52 02	
14	01 20 01	30 01	41 01	53 02	00 02	08 02	17 02	28 02	33 02	39 02	45 02	52 03	00 03	
15	02 10 02	15 02	21 02	28 02	32 02	37 02	42 02	48 02	51 02	54 02	58 03	02 03	06 03	
16	02 59 03	00 03	02 03	03 03	04 03	05 03	06 03	07 03	08 03	08 03	09 03	10 03	11 03	

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

609

LOCAL MEAN TIME OF MOONSET (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Apr. 1	03 20	03 34	03 48	04 04	04 13	04 23	04 36	04 51	04 58	05 05	05 14	05 23	05 34
2	04 07	04 17	04 27	04 38	04 45	04 53	05 01	05 12	05 16	05 22	05 28	05 37	05 42
3	04 51	04 56	05 03	05 10	05 14	05 18	05 23	05 30	05 32	05 36	05 39	05 43	05 47
4	05 32	05 34	05 36	05 39	05 40	05 42	05 43	05 45	05 46	05 47	05 48	05 50	05 51
5	06 13	06 11	06 09	06 07	06 06	06 04	06 03	06 01	05 59	05 58	05 57	05 56	05 55
6	06 54	06 48	06 42	06 35	06 31	06 27	06 22	06 16	06 13	06 10	06 06	06 02	05 58
7	07 36	07 26	07 16	07 05	06 59	06 51	06 43	06 32	06 28	06 22	06 17	06 10	06 03
8	08 19	08 06	07 52	07 37	07 28	07 18	07 06	06 52	06 45	06 38	06 29	06 20	06 09
9	09 04	08 48	08 32	08 12	08 01	07 48	07 33	07 15	07 06	06 56	06 46	06 33	06 18
10	09 52	09 34	09 14	08 52	08 39	08 24	08 06	07 44	07 33	07 21	07 08	06 52	06 33
11	10 42	10 22	10 01	09 36	09 22	09 06	08 46	08 21	08 09	07 55	07 40	07 21	06 58
12	11 33	11 13	10 52	10 27	10 12	09 55	09 34	09 09	08 56	08 42	08 25	08 05	07 40
13	12 26	12 07	11 46	11 22	11 08	10 52	10 32	10 07	09 55	09 42	09 26	09 07	08 44
14	13 19	13 02	12 43	12 22	12 09	11 55	11 37	11 16	11 06	10 54	10 40	10 25	10 06
15	14 12	13 58	13 42	13 25	13 14	13 02	12 48	12 31	12 23	12 14	12 04	11 52	11 38
16	15 03	14 53	14 42	14 29	14 22	14 13	14 03	13 51	13 45	13 39	13 32	13 24	13 15
17	15 54	15 49	15 42	15 35	15 31	15 26	15 20	15 13	15 10	15 07	15 03	14 59	14 54
18	16 46	16 44	16 43	16 42	16 41	16 40	16 39	16 38	16 37	16 36	16 35	16 34	16 34
19	17 38	17 41	17 45	17 50	17 53	17 56	17 59	18 03	18 05	18 08	18 10	18 12	18 15
20	18 32	18 40	18 50	19 00	19 06	19 13	19 22	19 32	19 36	19 41	19 47	19 53	20 01
21	19 28	19 42	19 56	20 12	20 22	20 33	20 45	21 01	21 08	21 16	21 26	21 36	21 48
22	20 28	20 45	21 03	21 24	21 36	21 51	22 08	22 28	22 38	22 50	23 02	23 17	23 35
23	21 30	21 49	22 10	22 34	22 48	23 04	23 24	23 49	....	....	....	....	....
24	22 31	22 51	23 13	23 38	23 53	....	....	....	00 01	00 14	00 30	00 49	01 12
25	23 31	23 50	....	....	....	00 10	00 31	00 56	01 09	01 23	01 40	02 00	02 25
26	....	....	00 11	00 35	00 49	01 05	01 25	01 49	02 00	02 14	02 29	02 47	03 08
27	00 27	00 44	01 03	01 24	01 36	01 50	02 07	02 28	02 38	02 48	03 01	03 15	03 32
28	01 18	01 33	01 48	02 06	02 16	02 27	02 41	02 57	03 04	03 13	03 22	03 33	03 45
29	02 06	02 17	02 28	02 41	02 49	02 58	03 07	03 19	03 25	03 31	03 38	03 45	03 54
30	02 50	02 57	03 05	03 13	03 18	03 24	03 30	03 38	03 41	03 45	03 49	03 54	03 59
May 1	03 32	03 35	03 39	03 43	03 45	03 47	03 50	03 53	03 55	03 57	03 59	04 01	04 03
2	04 13	04 12	04 11	04 10	04 10	04 09	04 09	04 08	04 08	04 08	04 08	04 07	04 07
3	04 53	04 49	04 44	04 39	04 36	04 32	04 28	04 23	04 21	04 19	04 16	04 13	04 10
4	05 34	05 26	05 17	05 08	05 02	04 55	04 48	04 39	04 35	04 30	04 26	04 20	04 14
5	06 17	06 05	05 53	05 38	05 30	05 21	05 10	04 57	04 51	04 44	04 37	04 28	04 19
6	07 01	06 46	06 30	06 12	06 02	05 50	05 36	05 18	05 10	05 01	04 51	04 40	04 27
7	07 48	07 30	07 12	06 50	06 38	06 23	06 06	05 45	05 35	05 24	05 11	04 56	04 39
8	08 37	08 18	07 57	07 33	07 19	07 03	06 43	06 19	06 08	05 54	05 39	05 21	04 59
9	09 28	09 08	08 46	08 21	08 06	07 49	07 29	07 03	06 50	06 36	06 19	05 59	05 34
10	10 20	10 00	09 39	09 15	08 59	08 43	08 23	07 57	07 45	07 31	07 14	06 54	06 29
11	11 12	10 54	10 35	10 12	09 59	09 43	09 24	09 02	08 50	08 38	08 23	08 06	07 45
12	12 04	11 48	11 32	11 12	11 01	10 48	10 32	10 13	10 04	09 54	09 42	09 29	09 13
13	12 54	12 42	12 29	12 14	12 05	11 55	11 44	11 29	11 22	11 15	11 06	10 57	10 46
14	13 44	13 36	13 27	13 17	13 11	13 05	12 57	12 48	12 44	12 38	12 33	12 27	12 20
15	14 33	14 30	14 26	14 21	14 19	14 16	14 12	14 08	14 07	14 05	14 02	14 00	13 57
16	15 23	15 24	15 26	15 27	15 28	15 29	15 30	15 31	15 32	15 32	15 33	15 34	15 35

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

LOCAL MEAN TIME OF MOONRISE (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	c°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°	
Date.	h m		h m		h m		h m		h m		h m		h m	
May 16	22	50	03	00	03	02	03	03	03	04	03	05	03	06
17	03	50	03	40	03	42	03	38	03	36	03	33	03	30
18	24	43	04	35	04	26	04	16	04	10	04	04	03	56
19	05	40	05	27	05	13	04	58	04	49	04	38	04	27
20	26	40	05	24	06	06	05	45	05	33	05	20	05	04
21	27	44	07	24	07	04	05	40	06	26	06	09	05	50
22	08	47	08	27	08	05	07	40	07	25	07	08	06	47
23	09	49	09	29	09	08	08	44	08	30	08	13	07	54
24	10	46	10	29	10	10	09	49	09	36	09	22	09	05
25	11	39	11	24	11	09	10	52	10	42	10	30	10	16
26	12	26	12	16	12	05	11	52	11	45	11	36	11	26
27	13	11	13	04	12	57	12	49	12	44	12	39	12	33
28	13	53	13	50	13	47	13	44	13	42	13	40	13	38
29	14	33	14	34	14	36	14	38	14	38	14	39	14	40
30	15	14	15	19	15	24	15	30	15	34	15	38	15	43
June 1	15	55	16	04	16	13	16	24	16	30	16	37	16	46
2	16	37	16	50	17	03	17	18	17	27	17	37	17	49
3	17	22	17	38	17	54	18	13	18	25	18	38	18	53
4	18	10	18	28	18	47	19	09	19	22	19	38	19	56
5	19	00	19	19	19	40	20	05	20	19	20	36	20	56
6	20	51	20	12	20	33	20	58	21	13	21	30	21	51
7	20	44	21	03	21	24	21	48	22	03	22	19	22	39
8	21	36	21	53	22	12	22	34	22	47	23	02	23	19
9	22	26	22	41	22	57	23	15	23	26	23	38	23	52
10	23	16	23	27	23	39	23	53	....	....	....	00	10	00
11	....	....	....	....	....	00	01	00	10	00	21	00	33	00
12	20	04	00	11	00	19	00	28	00	33	00	39	00	46
13	20	52	00	54	00	58	01	01	01	04	01	06	01	09
14	21	40	01	38	01	37	01	35	01	34	01	33	01	31
15	22	30	02	24	02	17	02	10	02	06	02	01	01	55
16	23	24	03	13	03	01	02	48	02	41	02	32	02	23
17	24	21	04	06	03	50	03	32	03	22	03	10	02	55
18	05	22	05	04	04	45	04	22	04	09	03	54	03	37
19	06	26	06	06	05	45	05	20	05	05	04	48	04	28
20	07	30	07	10	06	48	06	24	06	09	05	52	05	31
21	08	31	08	13	07	53	07	30	07	17	07	01	06	42
22	09	28	09	12	08	55	08	36	08	25	08	12	07	56
23	10	19	10	07	09	54	09	40	09	31	09	21	09	09
24	11	06	10	58	10	40	10	39	10	33	10	27	10	19
25	11	50	11	46	11	42	11	36	11	33	11	30	11	26
26	12	31	12	31	12	31	12	31	12	31	12	31	12	31
27	13	12	13	15	13	19	13	24	13	27	13	30	13	34
28	13	52	14	00	14	08	14	18	14	23	14	29	14	36
29	14	35	14	46	14	58	15	12	15	19	15	29	15	39
30	15	19	15	33	15	48	16	06	16	17	16	29	16	43
July 1	16	05	16	22	16	41	17	02	17	15	17	29	17	47
2	16	55	17	14	17	55	18	12	18	29	18	48	19	13

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

611

LOCAL MEAN TIME OF MOONSET (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
May 16	15 23 15	15 24 15	15 26 15	15 27 15	15 28 15	15 29 15	15 30 15	15 31 15	15 32 15	15 32 15	15 33 15	15 34 15	15 35 15
17	16 15 16	16 21 16	16 27 16	16 35 16	16 39 16	16 44 16	16 50 16	16 57 16	17 00 17	17 03 17	17 07 17	17 12 17	17 17 17
18	17 10 17	17 21 17	17 32 17	17 45 17	17 53 17	18 02 18	18 12 18	18 25 18	18 31 18	18 38 18	18 45 18	18 53 18	19 02 18
19	18 08 18	18 24 18	18 40 18	18 58 18	19 09 19	19 22 19	19 37 19	19 55 19	20 04 20	20 14 20	20 24 20	20 37 20	20 52 20
20	19 10 19	19 29 19	19 48 19	20 11 20	20 24 20	20 40 20	20 59 20	21 22 21	21 33 21	21 46 21	22 00 22	22 17 22	22 38 22
21	20 14 20	20 34 20	20 54 20	21 21 21	21 35 21	21 53 21	22 13 22	22 39 22	22 51 22	23 06 23	23 22 23	23 42 23	....
22	21 17 21	21 37 21	21 59 22	22 23 22	22 38 22	22 55 22	23 15 23	23 40 23	23 52 23	....	....	....	00 08 23
23	22 17 22	22 35 22	22 55 22	23 18 23	23 31 23	23 46 23	....	....	....	00 06 23	00 23 23	00 42 23	01 06 23
24	23 12 23	23 28 23	23 44 23	....	....	....	00 04 23	00 26 23	00 37 23	00 49 23	01 03 23	01 19 23	01 38 23
25	....	....	....	00 03 23	00 14 23	00 27 23	00 42 23	01 00 23	01 08 23	01 18 23	01 28 23	01 40 23	01 54 23
26	00 02 23	00 14 23	00 27 23	00 42 23	00 50 23	01 00 23	01 11 23	01 25 23	01 31 23	01 38 23	01 46 23	01 55 23	02 04 23
27	00 48 23	00 57 23	01 06 23	01 16 23	01 22 23	01 28 23	01 36 23	01 45 23	01 49 23	01 53 23	01 59 23	02 04 23	02 10 23
28	01 31 23	01 36 23	01 41 23	01 46 23	01 49 23	01 53 23	01 57 23	02 02 23	02 04 23	02 06 23	02 09 23	02 12 23	02 15 23
29	02 12 23	02 13 23	02 14 23	02 14 23	02 15 23	02 16 23	02 16 23	02 17 23	02 17 23	02 17 23	02 18 23	02 18 23	02 19 23
30	02 53 23	02 50 23	02 46 23	02 42 23	02 40 23	02 38 23	02 35 23	02 31 23	02 30 23	02 28 23	02 26 23	02 24 23	02 22 23
June 1	03 33 23	03 26 23	03 19 23	03 11 23	03 06 23	03 00 23	02 54 23	02 46 23	02 43 23	02 39 23	02 35 23	02 30 23	02 25 23
2	04 15 23	04 04 23	03 53 23	03 41 23	03 33 23	03 25 23	03 15 23	03 04 23	02 58 23	02 52 23	02 46 23	02 38 23	02 30 23
3	04 59 23	04 45 23	04 30 23	04 13 23	04 03 23	03 52 23	03 39 23	03 24 23	03 16 23	03 08 23	02 59 23	02 48 23	02 36 23
4	05 45 23	05 28 23	05 10 23	04 50 23	04 38 23	04 24 23	04 08 23	03 48 23	03 39 23	03 28 23	03 16 23	03 03 23	02 47 23
5	06 34 23	06 15 23	05 55 23	05 31 23	05 18 23	05 02 23	04 43 23	04 20 23	04 09 23	03 56 23	03 41 23	03 24 23	03 04 23
6	07 25 23	07 04 23	06 43 23	06 18 23	06 03 23	05 46 23	05 26 23	05 00 23	04 48 23	04 34 23	04 17 23	03 58 23	03 33 23
7	08 17 23	07 56 23	07 35 23	07 10 23	06 55 23	06 38 23	06 18 23	05 52 23	05 39 23	05 25 23	05 08 23	04 48 23	04 22 23
8	09 09 23	08 50 23	08 30 23	08 06 23	07 52 23	07 36 23	07 17 23	06 53 23	06 41 23	06 28 23	06 13 23	05 55 23	05 32 23
9	10 00 23	09 44 23	09 26 23	09 05 23	08 53 23	08 39 23	08 23 23	08 02 23	07 52 23	07 42 23	07 29 23	07 14 23	06 57 23
10	10 50 23	10 37 23	10 22 23	10 06 23	09 56 23	09 45 23	09 32 23	09 16 23	09 08 23	08 51 23	08 40 23	08 27 23	08 10 23
11	11 39 23	11 29 23	11 19 23	11 07 23	11 00 23	10 52 23	10 43 23	10 32 23	10 27 23	10 21 23	10 15 23	10 08 23	10 00 23
12	12 26 23	12 21 23	12 16 23	12 09 23	12 05 23	12 01 23	11 56 23	11 50 23	11 47 23	11 44 23	11 40 23	11 36 23	11 32 23
13	13 14 23	13 14 23	13 13 23	13 12 23	13 11 23	13 10 23	13 10 23	13 09 23	13 08 23	13 08 23	13 07 23	13 07 23	13 06 23
14	14 03 23	14 07 23	14 11 23	14 16 23	14 19 23	14 22 23	14 26 23	14 30 23	14 32 23	14 34 23	14 37 23	14 39 23	14 42 23
15	14 55 23	15 04 23	15 13 23	15 23 23	15 30 23	15 36 23	15 44 23	15 54 23	15 59 23	16 04 23	16 10 23	16 16 23	16 23 23
16	15 50 23	16 03 23	16 17 23	16 33 23	16 43 23	16 54 23	17 06 23	17 22 23	17 29 23	17 37 23	17 46 23	17 57 23	18 08 23
17	16 50 23	17 06 23	17 24 23	17 45 23	17 58 23	18 12 23	18 29 23	18 49 23	18 59 23	19 11 23	19 23 23	19 38 23	19 56 23
18	17 53 23	18 12 23	18 33 23	18 57 23	19 11 23	19 28 23	19 48 23	20 12 23	20 24 23	20 38 23	20 54 23	21 12 23	21 36 23
19	18 57 23	19 17 23	19 39 23	20 04 23	20 19 23	20 36 23	20 57 23	21 23 23	21 35 23	21 50 23	22 06 23	22 26 23	22 52 23
20	20 00 23	20 19 23	20 40 23	21 04 23	21 18 23	21 34 23	21 54 23	22 18 23	22 29 23	22 42 23	22 57 23	23 14 23	23 36 23
21	20 59 23	21 16 23	21 34 23	21 55 23	22 07 23	22 21 23	22 37 23	22 57 23	23 07 23	23 17 23	23 29 23	23 43 23	23 59 23
22	21 53 23	22 07 23	22 21 23	22 38 23	22 48 23	22 58 23	23 11 23	23 27 23	23 34 23	23 42 23	23 51 23	....	....
23	22 42 23	22 52 23	23 03 23	23 15 23	23 22 23	23 29 23	23 38 23	23 49 23	23 54 23	....	....	00 01 23	00 12 23
24	23 27 23	23 33 23	23 40 23	23 47 23	23 51 23	23 56 23	....	....	....	00 00 23	00 06 23	00 13 23	00 20 23
25	....	....	....	....	....	....	00 01 23	00 07 23	00 10 23	00 14 23	00 17 23	00 21 23	00 26 23
26	00 10 23	00 12 23	00 14 23	00 16 23	00 18 23	00 19 23	00 21 23	00 24 23	00 24 23	00 25 23	00 27 23	00 28 23	00 29 23
27	00 51 23	00 49 23	00 47 23	00 44 23	00 43 23	00 42 23	00 40 23	00 38 23	00 37 23	00 36 23	00 35 23	00 34 23	00 33 23
28	01 31 23	01 26 23	01 20 23	01 13 23	01 09 23	01 05 23	00 59 23	00 53 23	00 50 23	00 47 23	00 44 23	00 40 23	00 36 23
29	02 13 23	02 03 23	01 54 23	01 42 23	01 36 23	01 28 23	01 20 23	01 10 23	01 05 23	01 00 23	00 54 23	00 48 23	00 40 23
30	02 56 23	02 43 23	02 29 23	02 14 23	02 05 23	01 55 23	01 43 23	01 28 23	01 22 23	01 14 23	01 06 23	00 57 23	00 46 23
July 1	03 41 23	03 25 23	03 08 23	02 49 23	02 38 23	02 25 23	02 10 23	01 51 23	01 43 23	01 33 23	01 22 23	01 09 23	00 55 23
2	04 29 23	04 11 23	03 51 23	03 29 23	03 16 23	03 01 23	02 43 23	02 20 23	02 10 23	01 58 23	01 44 23	01 28 23	01 09 23

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

LOCAL MEAN TIME OF MOONRISE (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat													
Date.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
July	1	17 55 17	17 17 35	17 58 18	12 18 29	18 48 19	13 19 25	19 38 19	54 20 13	20 36			
	2	17 46 18	06 18 28	18 53 19	08 19 25	19 46 20	12 20 24	20 39 20	56 21 16	21 42			
	3	18 39 18	59 19 20	19 45 19	59 20 16	20 36 21	02 21 14	21 28 21	44 22 03	22 27			
	4	19 32 19	50 20 10	20 35 20	46 21 01	21 19 21	42 21 52	22 05 22	19 22 35	22 54			
	5	20 23 20	59 20 56	21 16 21	27 21 40	21 55 22	13 22 22	22 32 22	43 22 55	23 10			
	6	21 13 21	26 21 39	21 54 22	03 22 13	22 24 22	39 22 45	22 52 23	00 23 09	23 19			
	7	22 02 22	10 22 19	22 30 22	36 22 42	22 50 23	00 23 04	23 08 23	14 23 20	23 26			
	8	22 49 22	53 22 58	23 03 23	06 23 10	23 13 23	18 23 20	23 23 23	25 23 28	23 31			
	9	23 36 23	36 23 36	23 36 23	36 23 36	23 36 23	36 23 36	23 36 23	35 23 36	23 35			
	10	.....	.....	.....	.....	.....	23 58 23	54 23 51	23 49 23	46 23 43	23 40		
	11	00 24 00	16 00 14	00 09 00	06 00 02	.....	.....	.....	.....	23 59 23	53 23 46		
	12	01 14 01	05 00 56	00 45 00	39 00 31	00 23 00	14 00 09	00 04 00	.....	.....	23 54		
	13	02 08 01	55 01 41	01 25 01	16 01 05	00 52 00	38 00 30	00 23 00	15 00 05	.....	.....
	14	03 06 02	49 02 31	02 10 01	58 01 45	01 28 01	09 00 59	00 49 00	37 00 23	00 08			
	15	04 08 03	48 03 28	03 04 02	50 02 33	02 14 01	50 01 39	01 26 01	11 00 53	00 32			
	16	05 11 04	51 04 29	04 04 03	49 03 32	03 11 02	45 02 33	02 18 02	02 01 43	01 17			
	17	06 14 05	54 05 33	05 09 04	55 04 38	04 18 03	54 03 42	03 28 03	12 02 54	02 30			
	18	07 13 06	56 06 37	06 16 06	04 05 49	05 32 05	11 05 01	04 50 04	37 04 22	04 03			
	19	08 07 07	54 07 39	07 22 07	12 07 01	06 47 06	31 06 23	06 15 06	05 05 54	05 41			
	20	08 57 08	47 08 37	08 25 08	18 08 10	08 00 07	49 07 44	07 38 07	31 07 24	07 16			
	21	09 43 09	37 09 31	09 24 09	20 09 15	09 10 09	04 09 01	08 57 08	54 08 50	08 45			
	22	10 26 10	24 10 23	10 21 10	19 10 18	10 17 10	15 10 14	10 13 10	12 10 11	10 10			
	23	11 08 11	10 11 12	11 15 11	17 11 19	11 21 11	24 11 25	11 26 11	28 11 30	11 32			
	24	11 49 11	55 12 02	12 09 12	14 12 19	12 25 12	32 12 35	12 39 12	43 12 47	12 52			
	25	12 30 12	40 12 51	13 03 13	10 13 19	13 28 13	40 13 45	13 51 13	58 14 05	14 14			
	26	13 14 13	27 13 42	13 58 14	08 14 19	14 32 14	48 14 55	15 04 15	13 15 24	15 36			
	27	13 59 14	16 14 33	14 53 15	05 15 19	15 35 15	56 16 05	16 16 16	28 16 42	16 59			
	28	14 48 15	07 15 26	15 50 16	03 16 19	16 38 17	02 17 13	17 26 17	41 17 59	18 21			
	29	15 38 15	59 16 20	16 45 17	00 17 17	17 37 18	03 18 16	18 30 18	47 19 07	19 32			
	30	16 31 16	51 17 13	17 38 17	53 18 10	18 31 18	57 19 09	19 23 19	40 20 00	20 26			
Aug.	31	17 25 17	44 18 04	18 28 18	42 18 58	19 17 19	40 19 52	20 04 20	19 20 37	20 58			
	1	18 18 18	34 18 52	19 13 19	25 19 39	19 55 20	15 20 25	20 35 20	47 21 01	21 17			
	2	19 09 19	23 19 37	19 54 20	03 20 14	20 27 20	45 20 50	20 58 21	07 21 17	21 28			
	3	19 58 20	08 20 19	20 31 20	37 20 45	20 54 21	05 21 10	21 15 21	21 21 28	21 36			
	4	20 47 20	52 20 58	21 05 21	09 21 13	21 18 21	24 21 27	21 30 21	33 21 37	21 41			
	5	21 34 21	35 21 36	21 38 21	39 21 40	21 41 21	42 21 42	21 43 21	44 21 44	21 45			
	6	22 22 22	18 22 15	22 11 22	08 22 06	22 03 22	00 21 58	21 56 21	54 21 52	21 50			
	7	23 11 23	03 22 55	22 45 22	40 22 34	22 27 22	18 22 14	22 10 22	06 22 01	21 55			
	8	23 51 23	38 23 23	23 15 23	05 23 54	22 40 22	34 22 27	22 20 22	11 22 02	21 52			
	9	00 03 24	.....	.....	23 54 23	42 23 27	08 23 00	22 50 22	39 22 27	22 13			
	10	00 58 24	42 00 25	00 06 24	.....	.....	23 44 23	33 23 21	23 07 22	51 22 31			
	11	01 50 24	38 01 18	00 54 24	00 41 00	26 00 07	.....	.....	23 50 23	30 23 06			
	12	02 58 24	37 02 15	01 50 24	01 36 01	19 00 58	00 33 00	20 00 06	.....	.....	
	13	03 50 24	39 03 17	02 53 02	38 02 21	02 00 01	35 01 22	01 08 00	51 00 32	00 07			
	14	04 50 24	40 04 21	03 58 03	45 03 29	03 11 02	48 02 37	02 24 02	10 01 53	01 32			
	15	05 55 25	39 05 23	05 04 04	53 04 40	04 25 04	07 03 58	03 48 03	37 03 24	03 09			
	16	06 46 25	35 06 22	06 08 06	00 05 51	05 39 05	26 05 19	05 13 05	05 04 56	04 46			

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

613

LOCAL MEAN TIME OF MOONSET (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	Date.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
July	1	24 29 04	11 03 51	03 29 03	16 03 01	02 43 02	20 02 10	01 58 01	44 01 28	01 09				
	2	25 20 05	00 04 38	04 14 04	00 03 43	03 23 02	58 02 46	02 32 02	16 01 57	01 34				
	3	06 12 05	52 05 30	05 05 04	50 04 33	04 12 03	46 03 33	03 19 03	02 02 42	02 16				
	4	07 05 06	45 06 24	06 00 05	46 05 30	05 10 04	45 04 33	04 19 04	03 03 44	03 21				
	5	07 57 07	40 07 21	06 59 06	47 06 32	06 14 05	53 05 42	05 31 05	17 05 01	04 42				
	6	08 48 08	33 08 18	08 00 07	50 07 38	07 24 07	06 06 58	06 49 06	38 06 26	06 13				
	7	09 37 09	26 09 15	09 01 08	54 08 45	08 35 08	22 08 16	08 10 08	02 07 54	07 45				
	8	10 24 10	18 10 11	10 03 09	58 09 53	09 46 09	39 09 35	09 32 09	27 09 22	09 17				
	9	11 11 11	09 11 07	11 04 11	02 11 01	10 58 10	56 10 55	10 54 10	52 10 51	10 49				
	10	11 59 12	01 12 04	12 06 12	08 12 10	12 12 12	14 12 16	12 17 12	18 12 20	12 22				
	11	12 48 12	54 13 02	13 10 13	15 13 21	13 27 13	35 13 39	13 43 13	47 13 52	13 58				
	12	13 40 13	51 14 03	14 17 14	25 14 34	14 45 14	58 15 05	15 12 15	19 15 28	15 38				
	13	14 35 14	51 15 07	15 26 15	37 15 50	16 05 16	24 16 33	16 43 16	54 17 06	17 22				
	14	15 35 15	54 16 13	16 36 16	50 17 05	17 24 17	47 17 58	18 11 18	26 18 43	19 04				
	15	16 38 16	58 17 19	17 44 17	59 18 16	18 37 19	02 19 15	19 29 19	46 20 06	20 31				
	16	17 41 18	01 18 23	18 47 19	02 19 19	19 39 20	04 20 16	20 30 20	46 21 05	21 29				
	17	18 42 19	01 19 20	19 43 19	56 20 11	20 29 20	51 21 01	21 13 21	26 21 42	22 01				
	18	19 39 19	55 20 11	20 30 20	40 20 53	21 07 21	25 21 33	21 42 21	53 22 04	22 18				
	19	20 32 20	43 20 56	21 10 21	18 21 27	21 38 21	50 21 56	22 03 22	10 22 19	22 28				
	20	21 19 21	27 21 35	21 45 21	50 21 56	22 03 22	11 22 15	22 19 22	23 22 28	22 34				
	21	22 04 22	08 22 11	22 16 22	18 22 21	23 24 22	28 22 30	22 32 22	34 22 36	22 59				
	22	22 46 22	46 22 45	22 45 22	44 22 44	22 44 22	41 22 43	22 43 22	43 22 43	22 42				
	23	23 28 23	23 23 19	23 13 23	10 23 07	23 03 22	58 22 56	22 54 22	52 22 49	22 46				
	24	....	....	23 52 23	42 23 37	23 30 23	23 23 14	23 10 23	06 23 01	22 56	22 49			
	25	00 09 00	01 ....	....	....	23 55 23	45 23 32	23 26 23	20 23 12	23 04	22 55			
	26	00 51 00	40 00 27	00 13 00	05 ....	....	23 53 23	45 23 36	23 26 23	15 23 02				
	27	01 36 01	21 01 05	00 47 00	37 00 24	00 10 ....	....	23 59 23	46 23 31	23 14				
	28	02 23 02	05 01 46	01 25 01	12 00 58	00 41 00	20 00 10	....	....	23 56	23 34			
	29	03 12 02	53 02 32	02 08 01	54 01 38	01 18 00	54 00 42	00 29 00	14 ....	....			
	30	04 04 03	44 03 21	02 57 02	42 02 25	02 04 01	38 01 26	01 11 00	54 00 34	00 09				
	31	04 57 04	37 04 16	03 51 03	37 03 20	03 00 02	34 02 22	02 07 01	51 01 31	01 06				
Aug.	1	05 50 05	32 05 13	04 50 04	37 04 21	04 03 03	40 03 29	03 16 03	02 02 45	02 24				
	2	06 42 06	27 06 11	05 51 05	40 05 27	05 12 04	53 04 44	04 34 04	22 04 09	03 54				
	3	07 33 07	21 07 08	06 54 06	45 06 35	06 24 06	10 06 03	05 56 05	47 05 38	05 27				
	4	08 22 08	14 08 06	07 56 07	50 07 44	07 36 07	27 07 23	07 19 07	14 07 08	07 01				
	5	09 09 09	06 09 02	08 58 08	56 08 53	08 50 08	46 08 44	08 42 08	40 08 37	08 35				
	6	09 57 09	58 09 59	10 00 10	01 10 02	10 03 10	04 10 05	10 05 10	06 10 07	10 08				
	7	10 45 10	51 10 57	11 04 11	08 11 12	11 18 11	24 11 27	11 30 11	34 11 38	11 42				
	8	11 35 11	45 11 56	12 08 12	16 12 24	12 34 12	45 12 51	12 57 13	04 13 11	13 20				
	9	12 28 12	43 12 58	13 15 13	26 13 38	13 51 14	08 14 17	14 26 14	36 14 47	15 01				
	10	13 25 13	43 14 02	14 24 14	36 14 51	15 09 15	31 15 41	15 53 16	07 16 23	16 42				
	11	14 25 14	45 15 06	15 31 15	45 16 02	16 22 16	48 17 00	17 14 17	30 17 50	18 14				
	12	15 27 15	47 16 09	16 34 16	50 17 06	17 27 17	53 18 06	18 20 18	37 18 57	19 22				
	13	16 28 16	47 17 08	17 32 17	46 18 02	18 21 18	44 18 56	19 09 19	24 19 41	20 02				
	14	17 26 17	43 18 01	18 21 18	33 18 47	19 03 19	22 19 32	19 42 19	54 20 07	20 23				
	15	18 20 18	33 18 48	19 04 19	13 19 24	19 36 19	51 19 58	20 06 20	15 20 24	20 35				
	16	19 10 19	19 19 29	19 41 19	47 19 55	20 03 20	14 20 18	20 23 20	29 20 35	20 42				

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

LOCAL MEAN TIME OF MOONRISE (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	0° +10° +20° +30° +35° +40° +45° +50° +52° +54° +56° +58° +60°																										
Date	h m		h m		h m		h m		h m		h m		h m		h m		h m										
Aug. 16	05	46	06	35	06	22	06	08	06	00	05	51	05	39	05	26	05	19	05	13	05	05	04	56	04	46	
17	07	34	07	27	07	19	07	09	07	04	06	58	06	51	06	43	06	39	06	34	06	30	06	24	06	18	
18	08	19	08	16	08	12	08	08	08	06	08	03	08	00	07	56	07	54	07	53	07	51	07	48	07	46	
19	09	02	09	02	09	03	09	04	09	05	09	05	09	06	09	07	09	08	09	08	09	09	09	09	09	10	
20	09	43	09	45	09	53	09	59	10	03	10	06	10	11	10	16	10	18	10	22	10	25	10	28	10	32	
21	10	25	10	34	10	43	10	54	11	00	11	07	11	15	11	25	11	29	11	35	11	40	11	47	11	54	
22	11	08	11	20	11	33	11	48	11	57	12	07	12	19	12	33	12	40	12	48	12	56	13	06	13	17	
23	11	53	12	08	12	24	12	43	12	55	13	08	13	23	13	42	13	51	14	01	14	12	14	25	14	40	
24	12	40	12	58	13	17	13	39	13	52	14	08	14	26	14	49	14	59	15	12	15	26	15	43	16	03	
25	13	29	13	49	14	10	14	35	14	49	15	06	15	26	15	52	16	04	16	18	16	35	16	54	17	19	
26	14	21	14	42	15	03	15	29	15	44	16	01	16	22	16	48	17	01	17	16	17	33	17	54	18	20	
27	15	14	15	34	15	55	16	20	16	33	16	51	17	11	17	36	17	48	18	02	18	18	18	37	19	00	
28	16	08	16	26	16	45	17	07	17	20	17	35	17	52	18	14	18	24	18	36	18	50	19	05	19	23	
29	17	00	17	15	17	31	17	50	18	00	18	12	18	27	18	44	18	52	19	02	19	12	19	23	19	37	
30	17	51	18	02	18	14	18	28	18	36	18	45	18	56	19	09	19	14	19	21	19	28	19	36	19	45	
Sept. 31	18	41	18	48	18	55	19	04	19	09	19	15	19	21	19	29	19	32	19	36	19	41	19	46	19	51	
1	19	29	19	32	19	35	19	38	19	40	19	42	19	44	19	47	19	48	19	50	19	52	19	53	19	55	
2	20	18	20	16	20	14	20	11	20	10	20	09	20	07	20	05	20	04	20	03	20	02	20	01	19	59	
3	21	08	21	01	20	54	20	46	20	41	20	36	20	30	20	23	20	20	20	17	20	13	20	09	20	04	
4	21	59	21	48	21	36	21	23	21	15	21	07	20	56	20	44	20	39	20	33	20	26	20	18	20	10	
5	22	54	22	38	22	22	22	04	21	54	21	42	21	27	21	10	21	02	20	53	20	43	20	32	20	19	
6	23	51	23	33	23	13	22	51	22	38	22	23	22	05	21	43	21	33	21	21	21	08	20	52	20	34	
7	....	....	....	....	23	44	23	30	23	13	22	52	22	27	22	15	22	01	21	45	21	26	21	02	....	....
8	00	51	00	31	00	09	....	....	....	....	23	50	23	24	23	11	22	56	22	39	22	18	21	52	....	....
9	01	51	01	31	01	09	00	43	00	28	00	11	....	....	....	....	....	....	23	51	23	33	23	10	....	....
10	02	50	02	31	02	10	01	47	01	32	01	16	00	57	00	32	00	20	00	07	....	....	....	....	....	....
11	03	49	03	30	03	12	02	51	02	39	02	26	02	09	01	48	01	39	01	28	01	15	01	01	00	43	
12	04	38	04	25	04	11	03	55	03	46	03	35	03	22	03	07	02	59	02	51	02	42	02	32	02	19	
13	05	27	05	18	05	08	04	57	04	50	04	43	04	34	04	24	04	19	04	13	04	07	04	00	03	53	
14	06	12	06	08	06	02	05	56	05	52	05	48	05	44	05	38	05	35	05	32	05	29	05	26	05	22	
15	06	56	06	55	06	54	06	53	06	52	06	52	06	51	06	50	06	49	06	49	06	49	06	48	06	47	
16	07	38	07	41	07	45	07	49	07	51	07	54	07	57	08	00	08	02	08	04	08	06	08	08	08	11	
17	08	20	08	27	08	34	08	44	08	49	08	54	09	01	09	09	09	13	09	18	09	23	09	28	09	34	
18	09	02	09	13	09	25	09	38	09	46	09	55	10	06	10	19	10	25	10	31	10	39	10	47	10	57	
19	09	46	10	01	10	16	10	34	10	44	10	56	11	10	11	28	11	36	11	45	11	55	12	07	12	21	
20	10	32	10	50	11	08	11	30	11	42	11	57	12	14	12	35	12	46	12	57	13	11	13	26	13	45	
21	11	21	11	40	12	01	12	25	12	39	12	56	13	16	13	40	13	52	14	06	14	22	14	41	15	05	
22	12	11	12	32	12	54	13	19	13	34	13	52	14	13	14	40	14	52	15	07	15	25	15	46	16	13	
23	13	03	13	24	13	46	14	11	14	26	14	43	15	04	15	30	15	43	15	58	16	14	16	34	17	01	
24	13	56	14	15	14	35	14	59	15	13	15	29	15	48	16	11	16	23	16	36	16	50	17	08	17	29	
25	14	48	15	05	15	23	15	43	15	55	16	08	16	24	16	44	16	54	17	04	17	16	17	29	17	45	
26	15	39	15	53	16	07	16	23	16	32	16	43	16	56	17	10	17	17	17	25	17	34	17	44	17	54	
27	16	31	16	39	16	49	17	00	17	06	17	14	17	22	17	32	17	37	17	42	17	47	17	54	18	01	
28	17	19	17	24	17	29	17	35	17	38	17	42	17	46	17	51	17	53	17	56	17	58	18	02	18	05	
29	18	08	18	08	18	08	18	09	18	09	18	09	18	09	18	09	18	09	18	09	18	09	18	09	18	09	18
30	18	59	18	54	18	49	18	43	18	40	18	36	18	32	18	27	18	25	18	22	18	20	18	17	18	13	
Oct. 1	19	51	19	42	19	32	19	20	19	14	19	06	18	58	18	47	18	43	18	37	18	32	18	26	18	18	

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

615

LOCAL MEAN TIME OF MOONSET (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
Aug. 16	19 19	19 19	19 19	19 29	19 41	19 47	19 55	20 03	20 14	20 18	20 23	20 29	20 35
17	19 56	20 01	20 07	20 13	20 17	20 21	20 26	20 32	20 34	20 37	20 40	20 44	20 47
18	20 40	20 41	20 42	20 44	20 44	20 45	20 47	20 48	20 48	20 49	20 50	20 50	20 51
19	21 22	21 19	21 16	21 12	21 11	21 08	21 06	21 03	21 02	21 00	20 58	20 57	20 54
20	22 04	21 57	21 50	21 42	21 37	21 32	21 25	21 18	21 15	21 11	21 07	21 03	20 58
21	22 46	22 35	22 24	22 12	22 05	21 56	21 47	21 35	21 30	21 24	21 18	21 11	21 02
22	23 30	23 16	23 01	22 44	22 35	22 24	22 11	21 55	21 48	21 40	21 30	21 20	21 09
23	....	23 58	23 41	23 20	23 08	22 55	22 39	22 19	22 10	21 59	21 47	21 34	21 18
24	00 15	....	....	....	23 48	23 32	23 13	22 50	22 38	22 26	22 11	21 54	21 34
25	01 04	00 45	00 24	00 01	....	....	23 55	23 29	23 17	23 03	22 46	22 26	22 01
26	01 54	01 34	01 13	00 48	00 33	00 16	....	....	....	23 53	23 36	23 15	22 49
27	02 47	02 27	02 05	01 40	01 25	01 07	00 46	00 20	00 07	....	....	....	23 59
28	03 40	03 21	03 00	02 37	02 22	02 06	01 47	01 22	01 10	00 57	00 41	00 22	....
29	04 33	04 16	03 58	03 37	03 25	03 11	02 54	02 33	02 23	02 12	01 59	01 44	01 26
30	05 25	05 11	04 57	04 40	04 30	04 19	04 06	03 50	03 42	03 34	03 24	03 13	03 01
Sept. 31	06 15	06 05	05 55	05 44	05 37	05 29	05 20	05 09	05 04	04 58	04 52	04 45	04 37
1	07 04	06 59	06 54	06 47	06 43	06 40	06 35	06 29	06 27	06 24	06 20	06 17	06 13
2	07 52	07 52	07 52	07 51	07 51	07 50	07 50	07 50	07 50	07 49	07 49	07 48	07 48
3	08 41	08 40	08 50	08 56	08 59	09 02	09 06	09 11	09 13	09 16	09 19	09 22	09 25
4	09 32	09 41	09 50	10 01	10 08	10 15	10 23	10 34	10 38	10 44	10 50	10 56	11 04
5	10 24	10 38	10 52	11 08	11 18	11 29	11 42	11 58	12 05	12 13	12 22	12 33	12 45
6	11 20	11 37	11 56	12 17	12 29	12 43	13 00	13 21	13 31	13 42	13 55	14 10	14 27
7	12 19	12 39	13 00	13 24	13 38	13 55	14 14	14 39	14 51	15 05	15 21	15 40	16 03
8	13 20	13 40	14 02	14 28	14 42	15 00	15 21	15 47	16 00	16 15	16 32	16 53	17 19
9	14 20	14 40	15 01	15 26	15 40	15 57	16 17	16 42	16 54	17 08	17 24	17 42	18 06
10	15 18	15 36	15 55	16 17	16 30	16 44	17 02	17 23	17 33	17 45	17 58	18 13	18 31
11	16 12	16 27	16 42	17 01	17 11	17 23	17 37	17 54	18 02	18 10	18 20	18 31	18 44
12	17 02	17 13	17 25	17 38	17 46	17 55	18 05	18 17	18 23	18 29	18 36	18 44	18 52
13	17 49	17 56	18 04	18 12	18 17	18 22	18 29	18 36	18 40	18 44	18 48	18 52	18 57
14	18 34	18 36	18 40	18 43	18 45	18 47	18 50	18 53	18 54	18 56	18 57	18 59	19 01
15	19 16	19 15	19 14	19 12	19 12	19 10	19 09	19 08	19 07	19 07	19 06	19 05	19 04
16	19 58	19 53	19 47	19 41	19 38	19 34	19 29	19 23	19 20	19 18	19 15	19 11	19 07
17	20 40	20 31	20 22	20 11	20 04	19 57	19 49	19 39	19 35	19 30	19 24	19 18	19 11
18	21 24	21 11	20 58	20 42	20 33	20 23	20 12	19 57	19 51	19 43	19 35	19 26	19 16
19	22 09	21 53	21 36	21 17	21 05	20 53	20 38	20 19	20 10	20 01	19 50	19 37	19 23
20	22 56	22 37	22 18	21 55	21 42	21 27	21 09	20 47	20 36	20 24	20 10	19 54	19 35
21	23 45	23 25	23 04	22 39	22 25	22 08	21 47	21 22	21 10	20 56	20 40	20 20	19 56
22	....	....	23 54	23 28	23 13	22 55	22 34	22 07	21 54	21 40	21 22	21 01	20 34
23	00 36	00 16	....	....	....	23 50	23 30	23 04	22 52	22 37	22 20	22 00	21 34
24	01 29	01 09	00 47	00 22	00 08	....	....	....	....	23 47	23 33	23 16	22 55
25	02 21	02 03	01 44	01 21	01 08	00 52	00 34	00 11	00 00	....	....	....	....
26	03 13	02 58	02 41	02 22	02 11	01 59	01 44	01 25	01 16	01 06	00 55	00 42	00 27
27	04 03	03 52	03 40	03 26	03 18	03 08	02 57	02 43	02 37	02 30	02 22	02 13	02 03
28	04 53	04 46	04 38	04 30	04 25	04 19	04 12	04 04	04 00	03 56	03 51	03 46	03 40
29	05 42	05 40	05 37	05 34	05 33	05 30	05 28	05 25	05 24	05 23	05 21	05 19	05 17
30	06 32	06 34	06 37	06 40	06 42	06 44	06 46	06 48	06 50	06 51	06 52	06 54	06 56
Oct. 1	07 23	07 31	07 38	07 47	07 52	07 58	08 05	08 13	08 17	08 21	08 26	08 31	08 37

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

LOCAL MEAN TIME OF MOONRISE (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date													
Oct.	1	10 51 19	12 19	13 19	14 19	15 19	16 18	17 18	18 18	19 18	20 18	21 18	22 18
	2	22 47 20	23 20	24 20	25 20	26 19	27 19	28 19	29 19	30 19	31 19	32 19	33 19
	3	21 44 21	22 21	23 21	24 21	25 20	26 20	27 20	28 19	29 19	30 19	31 19	32 19
	4	22 45 22	23 22	24 22	25 21	26 21	27 21	28 20	29 20	30 19	31 19	32 19	33 19
	5	23 46 23	24 23	25 23	26 22	27 22	28 22	29 21	30 21	31 20	32 20	33 20	34 20
	6	.....	.....	.....	23 40 23	25 23	26 23	27 22	28 22	29 22	30 21	31 21	32 21
	7	20 47 20	21 20	22 20	23 20	24 19	25 19	26 19	27 19	28 18	29 18	30 18	31 18
	8	01 42 01	24 01	25 01	26 00	27 00	28 00	29 00	30 00	31 00	32 00	33 00	34 00
	9	02 35 02	25 02	26 02	27 01	28 01	29 01	30 01	31 00	32 00	33 00	34 00	35 00
	10	03 24 03	26 03	27 03	28 02	29 02	30 02	31 02	32 02	33 02	34 02	35 02	36 02
	11	04 00 04	27 04	28 04	29 03	30 03	31 03	32 03	33 03	34 03	35 03	36 03	37 03
	12	04 52 04	28 04	29 04	30 04	31 04	32 04	33 04	34 04	35 04	36 04	37 04	38 04
	13	05 34 05	29 05	30 05	31 05	32 05	33 05	34 05	35 05	36 05	37 05	38 05	39 05
	14	06 16 06	30 06	31 06	32 06	33 06	34 06	35 06	36 06	37 06	38 06	39 06	40 06
	15	06 58 07	31 07	32 07	33 07	34 07	35 07	36 07	37 07	38 07	39 07	40 07	41 07
	16	07 42 07	32 08	33 08	34 08	35 08	36 08	37 08	38 08	39 08	40 08	41 08	42 08
	17	08 27 08	33 09	34 09	35 09	36 09	37 09	38 09	39 09	40 09	41 09	42 09	43 09
	18	09 14 09	34 09	35 10	36 10	37 10	38 10	39 10	40 10	41 10	42 10	43 10	44 10
	19	10 04 10	35 10	36 11	37 11	38 11	39 11	40 11	41 11	42 11	43 11	44 11	45 11
	20	10 54 11	36 11	37 12	38 12	39 12	40 12	41 12	42 12	43 12	44 12	45 12	46 12
	21	11 40 12	37 12	38 13	39 13	40 13	41 13	42 13	43 13	44 13	45 13	46 13	47 13
	22	12 37 12	38 13	39 14	40 14	41 14	42 14	43 14	44 14	45 14	46 14	47 14	48 14
	23	13 28 13	39 14	40 15	41 15	42 15	43 15	44 15	45 15	46 15	47 15	48 15	49 15
	24	14 17 14	40 15	41 16	42 16	43 16	44 16	45 16	46 16	47 16	48 16	49 16	50 16
	25	15 00 15	41 16	42 17	43 17	44 17	45 17	46 17	47 17	48 17	49 17	50 17	51 17
	26	15 53 15	42 17	43 18	44 18	45 18	46 18	47 18	48 18	49 18	50 18	51 18	52 18
	27	16 45 16	43 18	44 19	45 19	46 19	47 19	48 19	49 19	50 19	51 19	52 19	53 19
	28	17 30 17	44 19	45 20	46 20	47 20	48 20	49 20	50 20	51 20	52 20	53 20	54 20
	29	18 32 18	45 20	46 21	47 21	48 21	49 21	50 21	51 21	52 21	53 21	54 21	55 21
	30	19 30 19	46 21	47 22	48 22	49 22	50 22	51 22	52 22	53 22	54 22	55 22	56 22
	31	20 32 20	47 22	48 23	49 23	50 23	51 23	52 23	53 23	54 23	55 23	56 23	57 23
Nov.	1	21 36 21	48 23	49 24	50 24	51 24	52 24	53 24	54 24	55 24	56 24	57 24	58 24
	2	22 38 22	49 24	50 25	51 25	52 25	53 25	54 25	55 25	56 25	57 25	58 25	59 25
	3	23 38 23	50 25	51 26	52 26	53 26	54 26	55 26	56 26	57 26	58 26	59 26	60 26
	4	.....	.....	.....	23 41 23	25 23	26 23	27 23	28 23	29 23	30 23	31 23	32 23
	5	00 32 00	51 26	52 27	53 27	54 27	55 27	56 27	57 27	58 27	59 27	60 27	61 27
	6	01 22 01	52 27	53 28	54 28	55 28	56 28	57 28	58 28	59 28	60 28	61 28	62 28
	7	02 04 02	53 28	54 29	55 29	56 29	57 29	58 29	59 29	60 29	61 29	62 29	63 29
	8	02 52 02	54 29	55 30	56 30	57 30	58 30	59 30	60 30	61 30	62 30	63 30	64 30
	9	03 33 03	55 30	56 31	57 31	58 31	59 31	60 31	61 31	62 31	63 31	64 31	65 31
	10	04 14 04	56 31	57 32	58 32	59 32	60 32	61 32	62 32	63 32	64 32	65 32	66 32
	11	04 56 04	57 32	58 33	59 33	60 33	61 33	62 33	63 33	64 33	65 33	66 33	67 33
	12	05 39 05	58 33	59 34	60 34	61 34	62 34	63 34	64 34	65 34	66 34	67 34	68 34
	13	06 23 06	59 34	60 35	61 35	62 35	63 35	64 35	65 35	66 35	67 35	68 35	69 35
	14	07 10 07	60 35	61 36	62 36	63 36	64 36	65 36	66 36	67 36	68 36	69 36	70 36
	15	07 50 08	61 36	62 37	63 37	64 37	65 37	66 37	67 37	68 37	69 37	70 37	71 37
	16	08 49 09	62 37	63 38	64 38	65 38	66 38	67 38	68 38	69 38	70 38	71 38	72 38

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

617

LOCAL MEAN TIME OF MOONSET, (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Oct. 1	07 23	07 31	07 38	07 47	07 52	07 58	08 05	08 13	08 17	08 21	08 26	08 31	08 37
2	08 17	08 29	08 42	08 56	09 05	09 14	09 26	09 40	09 46	09 54	10 02	10 11	10 22
3	09 14	09 30	09 46	10 06	10 18	10 31	10 47	11 06	11 16	11 26	11 38	11 52	12 08
4	10 13	10 32	10 52	11 16	11 30	11 46	12 05	12 29	12 41	12 54	13 10	13 28	13 50
5	11 14	11 34	11 57	12 22	12 37	12 55	13 16	13 42	13 56	14 10	14 28	14 49	15 16
6	12 15	12 35	12 57	13 23	13 38	13 55	14 16	14 42	14 54	15 09	15 26	15 46	16 11
7	13 13	13 32	13 52	14 15	14 29	14 45	15 03	15 26	15 37	15 49	16 04	16 20	16 40
8	14 08	14 24	14 41	15 01	15 12	15 25	15 40	15 59	16 07	16 17	16 28	16 41	16 55
9	14 59	15 11	15 24	15 40	15 48	15 58	16 10	16 24	16 30	16 37	16 45	16 54	17 04
10	15 46	15 54	16 04	16 14	16 20	16 26	16 34	16 43	16 47	16 52	16 57	17 03	17 09
11	16 30	16 35	16 40	16 45	16 48	16 51	16 55	17 00	17 02	17 04	17 07	17 10	17 13
12	17 13	17 13	17 13	17 14	17 14	17 14	17 14	17 15	17 15	17 15	17 15	17 15	17 15
13	17 54	17 51	17 47	17 42	17 40	17 37	17 33	17 29	17 27	17 25	17 23	17 21	17 18
14	18 36	18 28	18 20	18 11	18 06	18 00	17 53	17 44	17 41	17 36	17 32	17 27	17 21
15	19 19	19 08	18 56	18 42	18 34	18 25	18 14	18 01	17 56	17 49	17 42	17 34	17 25
16	20 03	19 48	19 33	19 15	19 04	18 52	18 38	18 21	18 14	18 05	17 55	17 44	17 30
17	20 50	20 32	20 13	19 52	19 39	19 25	19 08	18 46	18 36	18 25	18 12	17 57	17 40
18	21 38	21 18	20 58	20 33	20 19	20 02	19 43	19 18	19 06	18 53	18 37	18 19	17 56
19	22 28	22 08	21 45	21 20	21 05	20 47	20 26	19 59	19 46	19 31	19 14	18 52	18 25
20	23 20	22 59	22 37	22 11	21 56	21 39	21 17	20 50	20 37	20 23	20 05	19 43	19 16
21	....	23 52	23 31	23 07	22 53	22 37	22 17	21 52	21 40	21 27	21 11	20 52	20 29
22	00 11	....	....	....	23 54	23 40	23 23	23 02	22 52	22 41	22 28	22 13	21 55
23	01 02	00 45	00 27	00 06	....	....	....	....	....	....	23 51	23 40	23 28
24	01 52	01 38	01 24	01 07	00 58	00 46	00 33	00 17	00 09	00 01	....	....	....
25	02 41	02 31	02 21	02 10	02 03	01 55	01 46	01 35	01 30	01 24	01 18	01 11	01 03
26	03 29	03 24	03 19	03 13	03 09	03 05	03 01	02 55	02 52	02 50	02 46	02 43	02 39
27	04 18	04 18	04 18	04 18	04 18	04 18	04 18	04 17	04 17	04 17	04 17	04 16	04 16
28	05 09	05 14	05 19	05 25	05 28	05 32	05 36	05 42	05 44	05 47	05 50	05 53	05 57
29	06 02	06 12	06 22	06 34	06 41	06 49	06 58	07 09	07 15	07 20	07 27	07 34	07 42
30	06 59	07 13	07 28	07 46	07 56	08 08	08 22	08 39	08 46	08 56	09 07	09 18	09 32
Nov. 1	07 59	08 17	08 37	08 59	09 12	09 27	09 46	10 08	10 19	10 31	10 45	11 02	11 22
2	09 02	09 23	09 45	10 10	10 25	10 42	11 03	11 29	11 42	11 56	12 14	12 35	13 01
3	10 06	10 27	10 49	11 15	11 30	11 48	12 09	12 36	12 49	13 04	13 22	13 43	14 10
4	11 07	11 27	11 48	12 12	12 26	12 43	13 02	13 27	13 38	13 52	14 07	14 25	14 47
5	12 04	12 21	12 40	13 01	13 13	13 27	13 43	14 03	14 13	14 24	14 36	14 50	15 06
6	12 57	13 10	13 25	13 42	13 51	14 02	14 15	14 30	14 38	14 45	14 54	15 04	15 16
7	13 45	13 54	14 05	14 17	14 24	14 31	14 40	14 51	14 56	15 01	15 07	15 14	15 22
8	14 29	14 35	14 41	14 48	14 52	14 57	15 02	15 08	15 11	15 14	15 17	15 21	15 25
9	15 12	15 13	15 15	15 17	15 18	15 20	15 21	15 23	15 24	15 25	15 26	15 27	15 28
10	15 53	15 51	15 48	15 46	15 44	15 42	15 40	15 37	15 36	15 35	15 33	15 32	15 30
11	16 34	16 28	16 21	16 14	16 09	16 04	15 59	15 52	15 49	15 45	15 42	15 37	15 33
12	17 16	17 06	16 56	16 43	16 36	16 28	16 19	16 08	16 03	15 57	15 51	15 44	15 36
13	18 00	17 46	17 32	17 15	17 06	16 55	16 42	16 26	16 19	16 11	16 02	15 52	15 40
14	18 46	18 29	18 11	17 51	17 39	17 25	17 09	16 49	16 40	16 30	16 18	16 04	15 48
15	19 34	19 14	18 54	18 30	18 17	18 01	17 42	17 18	17 07	16 54	16 39	16 22	16 01
16	20 23	20 03	19 41	19 15	19 00	18 43	18 22	17 56	17 43	17 28	17 11	16 51	16 24
17	21 14	20 53	20 31	20 05	19 50	19 32	19 10	18 43	18 30	18 15	17 57	17 35	17 06

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

LOCAL MEAN TIME OF MOONRISE (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	0°	+10°	+20°	+30°	+35°	+40°	+45°	+50°	+52°	+54°	+56°	+58°	+60°
Date.													
Nov. 16	06 40 09	10 09	12 09	13 58	15 13	16 31	17 53	19 20	20 43	22 11	23 48	25 28	27 01
17	09 40 10	01 10	22 10	45 11	03 11	20 11	41 12	07 12	20 12	34 12	51 13	12 13	38 13
18	12 31 10	50 11	10 11	33 11	47 12	03 12	21 12	45 12	56 13	09 13	23 13	40 14	01 14
19	11 20 11	37 11	54 12	14 12	26 12	39 12	55 13	14 13	24 13	34 13	45 13	58 14	14 14
20	12 09 12	22 12	36 12	52 13	01 13	11 13	23 13	38 13	45 13	52 14	01 14	10 14	21 14
21	12 54 13	05 13	15 13	26 13	32 13	40 13	48 13	58 14	03 14	08 14	13 14	20 14	26 14
22	13 43 13	48 13	53 13	59 14	02 14	06 14	10 14	16 14	18 14	20 14	23 14	26 14	30 14
23	14 31 14	31 14	31 14	31 14	32 14	32 14	32 14	32 14	32 14	32 14	33 14	33 14	33 14
24	15 20 15	16 15	11 15	05 15	02 15	59 14	55 14	50 14	48 14	45 14	43 14	40 14	37 14
25	16 13 16	03 15	53 15	42 15	36 15	29 15	20 15	10 15	06 15	00 15	55 14	48 14	41 14
26	17 10 16	56 16	41 16	24 16	14 16	03 15	50 15	35 15	27 15	19 15	10 15	00 15	49 14
27	18 11 17	53 17	34 17	12 17	00 16	45 16	28 16	07 16	57 15	46 15	33 15	19 15	01 15
28	19 16 18	56 18	34 18	09 17	54 17	37 17	17 16	51 16	39 16	25 16	09 16	50 15	26 15
29	20 22 20	01 19	38 19	12 18	57 18	39 18	18 17	50 17	37 17	22 17	04 17	43 16	15 16
30	21 25 21	05 20	44 20	20 20	06 19	49 19	29 19	03 18	51 18	37 18	21 18	01 17	37 17
Dec. 1	22 24 22	07 21	49 21	28 21	16 21	02 20	44 20	24 20	13 20	02 19	49 19	34 19	16 19
2	23 17 23	04 22	50 22	33 22	24 22	13 22	00 21	44 21	36 21	28 21	19 21	08 20	56 20
3	23 57 23	47 23	35 23	29 23	21 23	12 23	02 22	57 22	51 22	45 22	38 22	30 22	23 22
4	20 06 23	....	....	....	....	....	....	....	....	....	....	23 23	59 23
5	20 51 20	46 20	40 20	34 20	30 20	26 20	21 20	16 20	13 20	10 20	07 20	03 20	....
6	01 33 21	32 21	31 21	30 21	29 21	28 21	28 21	26 21	26 21	25 21	25 21	24 21	23 21
7	02 14 22	17 22	20 22	24 22	27 22	29 22	32 22	36 22	37 22	39 22	41 22	43 22	46 22
8	02 55 23	02 23	10 23	18 23	24 23	29 23	36 23	44 23	48 23	52 23	57 23	04 24	08 24
9	03 37 23	03 24	00 24	13 24	21 24	30 24	40 24	53 24	59 24	05 25	05 25	13 25	21 25
10	04 21 24	35 24	50 24	08 25	18 25	30 25	44 25	06 26	10 26	19 26	29 26	41 26	55 26
11	05 07 25	24 25	42 25	04 26	16 26	31 26	48 26	07 27	10 27	20 27	32 27	45 27	08 28
12	05 55 25	14 26	33 26	07 26	14 27	30 27	50 27	08 28	16 28	28 28	41 28	58 28	09 29
13	06 45 27	06 27	28 27	54 28	09 28	27 28	48 28	09 29	15 29	28 29	43 29	10 30	22 30
14	07 36 27	07 28	19 28	45 29	00 29	18 29	39 29	10 30	18 30	33 30	51 30	11 31	39 31
15	08 27 28	47 29	08 30	32 29	46 30	10 31	22 31	46 31	58 31	11 32	26 32	44 32	12 33
16	09 17 29	34 29	53 29	14 30	26 30	40 30	57 30	11 31	18 31	27 31	38 31	51 31	12 32
17	10 05 30	19 30	34 30	52 30	11 31	21 31	31 31	43 31	50 31	59 31	12 32	19 32	31 32
18	10 52 31	02 31	13 31	26 31	33 31	42 31	52 31	12 32	18 32	24 32	31 32	42 32	50 32
19	11 37 31	44 31	50 31	58 32	12 32	18 32	24 32	31 32	38 32	45 32	51 32	58 32	05 33
20	12 23 32	25 32	27 32	29 32	31 32	33 32	35 32	37 32	38 32	39 32	40 32	42 32	43 32
21	13 09 33	07 33	13 33	01 33	13 33	25 33	39 33	56 33	12 34	21 34	32 34	45 34	58 34
22	13 54 33	51 33	44 33	35 33	25 33	13 33	19 33	32 33	45 33	58 33	13 34	20 34	31 34
23	14 31 34	39 34	27 34	13 34	05 34	15 34	28 34	45 34	58 34	14 35	21 35	31 35	42 35
24	15 18 35	32 35	16 35	04 35	14 35	28 35	45 35	58 35	14 36	21 36	31 36	42 36	53 36
25	16 05 36	32 36	11 36	01 36	15 36	31 36	48 36	15 37	22 37	31 37	42 37	53 37	04 38
26	16 51 37	36 37	14 37	04 37	18 37	35 37	52 37	15 38	22 38	31 38	42 38	53 38	04 39
27	17 37 38	43 38	18 38	07 38	21 38	38 38	55 38	16 39	23 39	32 39	43 39	54 39	05 40
28	18 23 39	48 39	28 39	19 39	05 39	18 39	36 39	53 39	17 40	24 40	33 40	44 40	55 40
29	19 09 40	58 40	34 40	24 40	10 40	23 40	40 40	57 40	18 41	25 41	34 41	45 41	56 41
30	19 55 41	06 41	21 41	11 41	01 41	15 41	32 41	49 41	19 42	26 42	35 42	46 42	57 42
31	20 41 42	14 42	29 42	19 42	05 42	18 42	36 42	53 42	20 43	27 43	36 43	47 43	58 43
32	21 27 43	28 43	25 43	22 43	20 43	18 43	16 43	14 43	12 43	11 43	10 43	08 43	06 43

For other longitudes and for southern latitudes see page 620.

MOONRISE AND MOONSET.

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LOCAL MEAN TIME OF MOONSET (MOON'S UPPER LIMB),
MERIDIAN OF GREENWICH, 1928.

Lat.	0°		+10°		+20°		+30°		+35°		+40°		+45°		+50°		+52°		+54°		+56°		+58°		+60°	
Date.	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m	h	m
Nov. 16	21	14	20	53	20	31	20	05	19	50	19	32	19	10	18	43	18	30	18	15	17	57	17	35	17	06
17	22	05	21	45	21	23	20	59	20	44	20	27	20	06	19	41	19	28	19	14	18	57	18	37	18	12
18	22	55	22	37	22	18	21	56	21	43	21	27	21	09	20	47	20	36	20	24	20	10	19	53	19	33
19	23	44	23	29	23	13	22	54	22	44	22	31	22	16	21	58	21	50	21	40	21	29	21	16	21	02
20	....	....	....	....	....	....	23	54	23	46	23	37	23	26	23	13	23	06	23	00	22	52	22	43	22	33
21	00	32	00	20	00	08	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
22	01	18	01	11	01	04	00	55	00	50	00	44	00	37	00	29	00	25	00	21	00	16	00	11	00	06
23	02	05	02	03	02	00	01	57	01	55	01	53	01	50	01	47	01	46	01	45	01	43	01	41	01	39
24	02	54	02	56	02	58	03	01	03	02	03	04	03	06	03	08	03	09	03	11	03	12	03	14	03	15
25	03	44	03	52	03	59	04	08	04	13	04	18	04	25	04	33	04	37	04	41	04	45	04	50	04	56
26	04	39	04	51	05	04	05	18	05	26	05	36	05	48	06	02	06	08	06	15	06	22	06	32	06	43
27	05	38	05	54	06	11	06	31	06	43	06	57	07	13	07	32	07	42	07	52	08	05	08	19	08	35
28	06	41	07	01	07	22	07	46	08	00	08	16	08	36	09	01	09	13	09	26	09	42	10	01	10	25
29	07	47	08	08	08	31	08	56	09	12	09	30	09	51	10	18	10	31	10	47	11	04	11	26	11	53
30	08	52	09	13	09	35	10	00	10	15	10	32	10	53	11	19	11	31	11	45	12	02	12	22	12	46
Dec. 1	09	54	10	12	10	32	10	54	11	08	11	22	11	40	12	02	12	13	12	25	12	38	12	54	13	12
2	10	50	11	05	11	21	11	40	11	50	12	02	12	16	12	34	12	42	12	51	13	01	13	12	13	25
3	11	41	11	52	12	04	12	18	12	26	12	34	12	45	12	57	13	03	13	09	13	16	13	24	13	32
4	12	28	12	35	12	42	12	51	12	56	13	01	13	08	13	15	13	19	13	22	13	27	13	31	13	37
5	13	11	13	14	13	17	13	21	13	23	13	25	13	28	13	31	13	33	13	34	13	36	13	38	13	40
6	13	53	13	52	13	50	13	49	13	49	13	48	13	46	13	46	13	45	13	44	13	44	13	43	13	42
7	14	34	14	29	14	23	14	17	14	14	14	10	14	05	14	00	13	57	13	54	13	52	13	48	13	44
8	15	15	15	06	14	57	14	46	14	40	14	33	14	25	14	15	14	10	14	06	14	00	13	54	13	47
9	15	58	15	46	15	32	15	17	15	08	14	58	14	47	14	32	14	26	14	19	14	11	14	02	13	51
10	16	43	16	27	16	10	15	51	15	40	15	27	15	12	14	54	14	45	14	35	14	24	14	12	13	58
11	17	30	17	12	16	52	16	29	16	16	16	01	15	43	15	20	15	10	14	58	14	44	14	28	14	08
12	18	19	17	59	17	38	17	12	16	58	16	41	16	20	15	55	15	43	15	29	15	12	14	52	14	28
13	19	10	18	49	18	27	18	01	17	46	17	28	17	06	16	39	16	26	16	11	15	53	15	31	15	03
14	20	01	19	41	19	19	18	54	18	39	18	21	18	00	17	34	17	21	17	07	16	49	16	28	16	01
15	20	52	20	33	20	13	19	50	19	36	19	20	19	01	18	38	18	26	18	13	17	58	17	40	17	18
16	21	40	21	25	21	08	20	48	20	36	20	23	20	07	19	47	19	38	19	28	19	16	19	02	18	45
17	22	28	22	15	22	02	21	46	21	37	21	27	21	15	21	00	20	53	20	45	20	36	20	26	20	15
18	23	14	23	05	22	56	22	45	22	39	22	32	22	24	22	14	22	09	22	04	21	58	21	52	21	44
19	23	59	23	55	23	50	23	44	23	41	23	38	23	34	23	29	23	26	23	24	23	21	23	18	23	14
20	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
21	00	45	00	45	00	45	00	45	00	45	00	45	00	45	00	45	00	45	00	45	00	45	00	45	00	45
22	01	32	01	37	01	42	01	48	01	51	01	55	01	59	02	04	02	07	02	10	02	13	02	16	02	20
23	02	22	02	32	02	42	02	54	03	00	03	08	03	17	03	28	03	33	03	39	03	45	03	52	04	00
24	03	18	03	31	03	46	04	03	04	13	04	25	04	39	04	55	05	03	05	12	05	22	05	33	05	46
25	04	17	04	35	04	54	05	16	05	29	05	44	06	02	06	24	06	35	06	47	07	01	07	17	07	36
26	05	22	05	42	06	04	06	29	06	44	07	01	07	22	07	48	08	01	08	16	08	33	08	53	09	19
27	06	29	06	50	07	12	07	38	07	53	08	11	08	32	08	59	09	12	09	27	09	45	10	06	10	33
28	07	34	07	54	08	14	08	39	08	53	09	09	09	28	09	53	10	04	10	17	10	32	10	50	11	12
29	08	35	08	52	09	09	09	30	09	42	09	55	10	11	10	31	10	40	10	50	11	02	11	15	11	30
30	09	30	09	43	09	57	10	13	10	22	10	32	10	44	10	58	11	05	11	13	11	21	11	30	11	40
31	10	21	10	30	10	39	10	49	10	55	11	02	11	10	11	20	11	24	11	28	11	34	11	40	11	46
32	11	07	11	11	11	16	11	21	11	24	11	28	11	32	11	37	11	39	11	41	11	44	11	47	11	50

For other longitudes and for southern latitudes see page 620.

FOR NORTHERN STATIONS NOT ON THE MERIDIAN OF GREENWICH,
AND FOR SOUTHERN STATIONS.

For northern stations not on the meridian of Greenwich.—For longitudes twelve hours or less west from Greenwich obtain the data for the given latitude from Table for the given date and for the date following; for longitude twelve hours or less east from Greenwich obtain the data for the given latitude from Table for the given date and for the date preceding. Subtract the time on the earlier date from the time on the later and multiply the difference by the twenty-fourth part of the longitude in hours and decimals of an hour, positive if west, and negative if east. Apply the product as a correction to the time on the given date.

For southern stations.—The instant of moonrise or moonset for any station south of the equator is within a few minutes that of moonset or moonrise, respectively, at a place of the same latitude north of the equator whose longitude is twelve hours different from that of the southern station.

If the southern station is twelve hours or less west from Greenwich, and the phenomenon at that station occurs between midnight and noon, the local civil day will be the same at the southern and northern stations. If, however, the phenomenon at the southern station occurs between noon and midnight, the local civil day at the northern station will be one day later than at the southern.

If the southern station is twelve hours or less east from Greenwich, and the phenomenon at that station occurs between midnight and noon, the local civil day at the northern station will be one less than at the southern station. If, however, the phenomenon occurs between noon and midnight, the local civil day will be the same at the two stations.

Having thus determined the true civil day at the northern station, compute by the rule for northern latitudes. For the desired local time of moonrise at the southern station change the time of moonset at the northern station twelve hours. For the desired local time of moonset at the southern station change the time of moonrise at the northern station twelve hours.

Example.—November 29, 1928, find the time of moonrise and moonset in longitude $9^{\text{h}} 40^{\text{m}}$ east from Greenwich and in latitude $37^{\circ} 50'$ south.

The longitude of the northern station is $2^{\text{h}}.3$ west from Greenwich and its latitude is $37^{\circ}.8$ N. Upon inspection of Table it is seen that, in accordance with the precepts given above, the civil day at the northern station is November 28 for moonrise and November 29 for moonset.

At northern station—

				Moonrise.			Moonset.		
				d	h	m	d	h	m
Table, Lat. $-37^{\circ}.8$	..	..	Nov.	28	17	45	Nov.	29	09 22
Table, Lat. $+37^{\circ}.8$	..	..		29	18	47		30	10 24
Difference	..	..			62			62	
Product of Diff. by $+\frac{2.3}{24}$	..	..			+6			+6	
Local mean time	..	..	Nov.	28	17	51	Nov.	29	09 29

At southern station—

				Moonset.			Moonrise.		
Time at northern station changed 12^{h}				Nov.	29	05 51	Nov.	29	21 28

STANDARD TIMES.

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STANDARD TIMES.

The following Standard Times, referred to the Meridian of Greenwich, have been adopted for railway and other purposes :—

h m	
12 00 E.	Fiji Islands.
11 30 E.	New Zealand.
11 00 E.	New Caledonia.
10 00 E.	Tasmania, Victoria, New South Wales, Queensland, New Guinea.
09 30 E.	South Australia.
09 00 E.	Japan, Korea.
08 00 E.	Western Australia, Portuguese Timor, British North Borneo, Philippine Islands, Macao, Hong Kong, China (Coast), Formosa.
07 00 E.	Straits Settlements, Federated Malay States, French Indo-China,
06 30 E.	Burma. [Siam.
05 30 E.	India (except Calcutta).
05 00 E.	Chagos Archipelago, Portuguese India.
04 00 E.	Mauritius, Seychelles.
03 00 E.	Somaliland, Madagascar.
02 30 E.	British East Africa.
02 00 E.	(East Europe).—Estonia, Finland, Latvia, Poland, Rumania, Bulgaria, Turkey, Greece, Cyprus, Egypt, Portuguese East Africa, South Africa.
01 00 E.	(Mid-Europe).—Germany, Lithuania, Luxemburg, Denmark, Sweden, Norway, Switzerland, Italy, Austria, Hungary, Czecho-Slovakia, Malta, Tunis, Portuguese West Africa, South-west Africa, Nigeria, Yugo-Slavia.
00 00	(Greenwich).—Great Britain, Ireland, France, Belgium, Spain, Portugal, Gibraltar, Algeria, Morocco, Farøe Islands, Gold Coast Colony.*
01 00 W.	Iceland, Madeira, Portuguese Guinea, Sierra Leone, Liberia.
02 00 W.	Azores and Cape Verde Islands.
03 00 W.	Eastern Brazil.
03 45 W.	British Guiana.
04 00 W.	(Atlantic).—Part of Canada, Leeward Islands, Argentine Republic, French Guiana, Uruguay, Central Brazil, Chile.
04 30 W.	Venezuela.
05 00 W.	(Eastern).—Parts of Canada and United States, Western Brazil, Peru, Panama, Jamaica, Bahamas.
06 00 W.	(Central).—Parts of Canada and United States, Honduras.
07 00 W.	(Mountain).—Parts of Canada and United States.
08 00 W.	(Pacific).—British Columbia and Part of United States.
09 00 W.	Yukon, Alaska.
10 30 W.	Sandwich Islands.
11 30 W.	Samoa.

* For Jan. 1–Sept. 1 only: 20^m E. for rest of year.

EXPLANATION OF THE ARTICLES

CONTAINED IN

THE NAUTICAL ALMANAC AND ASTRONOMICAL
EPHEMERIS FOR THE YEAR 1928.

THE necessarily concise headings in the body of the Almanac in many cases leave the precise meaning of the quantity tabulated in some uncertainty. Very little further explanation is likely to be required by a reader who consults (*a*) the tables of the Sun, Moon, and Planets, and the Star Catalogues quoted in the Preface ; (*b*) the explanation given in foreign almanacs of the matter supplied by them to this Almanac , (*c*) a section at the end of the Almanac for 1925, which will be here quoted as " Derivation." This section will be reprinted at intervals with changes incorporated.

Ephemeris of Sun and Moon. (Pages 1 to 145.)

" Derivation," Nos. 1 to 25, may be consulted.

Planetary Ephemerides. (Pages 146 to 188.)

In the " Derivation," Nos. 26 to 31, Mars is taken for purposes of illustration. Further statements are necessary as follows :—

Heliocentric places for the planets from Venus to Neptune are to be found in Appendices to the Almanacs for 1915 to 1917.

In the case of Jupiter and Saturn the times of passage over the meridian and the polar semidiameters have been calculated on the assumption, only approximately true, that the extremities of the axes of rotation are the north and south points of the discs.

The transit ephemerides for Mars, Jupiter, and Saturn extend from transit at 03^h through midnight to transit at 16^h ; for Uranus and Neptune from transit at 03^h through midnight to transit at 16^h ; for Venus the transit is given for every day.

Sun's Co-ordinates. (Pages 189 to 196.)

"Derivation," Nos. 32 and 33, may be consulted.

Precession, Nutation, etc. (Pages 197 to 200.)

"Derivation," Nos. 34 to 39, may be consulted.

Stars. (Pages 201 to 428.)

"Derivation," Nos. 40 to 51, may be consulted, and also the explanations of other Almanacs.

The Catalogue Number is that of the Catalogue for 1925.0 by W. S. Eichelberger, *Astronomical Papers, American Ephemeris and Nautical Almanac*, Vol. X, Part I.

The magnitudes have been taken from the same Catalogue which has taken them from *Harvard Annals*, 50. In accordance with *Harvard Bulletin* No. 822 (published too late for this Almanac) the magnitude of γ Argus will in future be given as 1.92.

At the foot of the column on pages 274 to 428 are given quantities designated $L\alpha$, $L\delta$, $\omega\alpha$, $\omega\delta$ to facilitate the calculation of the small parts of the star correction arising from the nutations, dL , $d\omega$, tabulated on pages 197 to 200.

The formulæ for these four quantities are

$$L\alpha = \sin \alpha \sin \omega \tan \delta \div 15$$

$$L\delta = \sin \omega \cos \alpha$$

$$\omega\alpha = -\cos \alpha \tan \delta \div 15$$

$$\omega\delta = \sin \alpha.$$

The formulæ to be used for further correction to the apparent places are

$$d\alpha = dL \times L\alpha + d\omega \times \omega\alpha + f'$$

$$d\delta = dL \times L\delta + d\omega \times \omega\delta.$$

The numerical values of f' are given on pages 220 to 227.

Moon at Transit. (Pages 429 to 447.)

"Derivation," No. 52, may be consulted.

The Right Ascension of the Moon's bright limb and Declination of the centre are given.

Eclipses. (Pages 448 to 458.)

The explanations of the *American Ephemeris* and the *Connaissance des Temps* may be consulted.

The Besselian Solar Eclipse Elements have the following geometrical signification :—

The fundamental plane is the plane passing through the centre of the Earth perpendicular to the axis of the Moon's shadow, *i.e.*, to the right line joining the centres of the Sun and Moon. The intersection of the fundamental plane with the Earth's Equator is taken as the axis of x , and the axis of y is perpendicular to it and directed towards the North, the Earth's centre being the origin of co-ordinates ; so that x and y are the co-ordinates of the point in which the axis of the shadow intersects the fundamental plane. The angle d is the declination of the point in which the axis of the shadow (in the direction Earth, Moon, Sun) intersects the celestial sphere. The angle μ is the Greenwich hour-angle of this same point.

The quantities l_1, l_2 are the radii of the shadow-cones upon the fundamental plane, l_1 corresponding to the penumbra and l_2 to the umbra or shadow. The latter is regarded as positive for an annular, and negative for a total Eclipse.

The values of the log tangents of the semi-angles of the shadow-cones of the penumbra and shadow respectively are also given.

The remaining quantities x', y' , and μ' are, respectively, the changes of x, y , and μ in one minute of mean time.

Occultations. (Pages 459 to 507.)

The explanation of the American Ephemeris should be consulted, and also " Derivation," No. 53.

Satellites of Mars. (Pages 508 and 509.)

The explanation of the American Ephemeris should be consulted.

Satellites of Jupiter. (Pages 510 to 534.)

The explanation of the *Connaissance des Temps* should be consulted.

In the Tables of Configurations the direction of the motion of the satellites is towards the numerals. White circles at the side of the tables denote transits in progress ; black circles, occultations or eclipses.

Satellites of Saturn, Uranus, and Neptune. (Pages 535 to 538, and 540 to 543.)

The explanation of the American Ephemeris should be consulted.

Rings of Saturn. (Page 539.)

This page gives the apparent size and orientation of Saturn's Rings and the planetocentric position of the Earth and Sun relatively to the plane of the Rings.

a and b are the axes of the outer ellipse of the outer ring.

P is the angle which the minor axis of the Ring-ellipse makes with the Declination circle passing through the middle point of Saturn ; + East, — West.

B is the angular elevation of the Earth above the plane of the Rings, as seen from Saturn ; + North, — South.

B' is the angular elevation of the Sun above the plane of the Rings, as seen from Saturn; \div North, $-$ South.

U is the Geocentric Longitude of Saturn reckoned on the plane of the Rings from the Ascending Node of the Ring on the Equator.

U' is the Heliocentric Longitude of Saturn, reckoned on the plane of the Rings, from the ascending Node of the Ring on the Ecliptic.

ω is the angular distance in the plane of the Rings from their ascending Node on the Earth's Equator to their Ascending Node on the Ecliptic.

The factor to be multiplied by a and b to obtain the axes of—

The inner ellipse of the outer ring = 0.8801 log. factor = 9.9445.

The outer ellipse of the inner ring = 0.8599 log. factor = 9.9344.

The inner ellipse of the inner ring = 0.6650 log. factor = 9.8228.

The inner ellipse of the dusky ring = 0.5486 log. factor = 9.7392.

Phenomena. (Pages 544 and 545.)

The conjunction of planet with planet is given only when the difference of declination does not exceed 3° ; that of planet with star when the difference does not exceed 10

In computing the time of greatest brilliancy of Venus it is assumed that the brilliancy varies as $\frac{(r+\Delta+R)(r+\Delta-R)}{r^3 \Delta^3}$, where r and R are the radii vectores of Venus and of the Earth respectively, and Δ is the distance of Venus from the Earth.

Physical Ephemeris of the Sun. (Page 546.)

P is the position-angle of the Sun's axis, B_0 the heliographical latitude of the Earth and L_0 the heliographical longitude of the centre of the disc.

Moon's Equator, Orbit, and Mean Longitude. (Page 547.)

The Moon's Equator descends upon the ecliptic at a constant angle at the point where the Moon's Orbit ascends upon the ecliptic.

Ω is the longitude of this point.

Ω' is the right ascension of the Ascending Node of the Moon's Equator upon the Earth's Equator.

i is the inclination of the two equators.

$\Delta+180^\circ$ is the distance from the Ascending Node of the Moon's Equator upon the Earth's Equator to the Ascending Node of the Moon's Orbit upon the ecliptic.

The mean longitude of the Moon's Perigee P'' and the Moon's mean longitude are given in a slightly different manner upon page 1.

Physical Ephemeris of the Moon. (Pages 548 to 555.)

"Derivation," No. 54, may be consulted.

C is the position-angle of the northern extremity of the Moon's axis.

Physical Ephemerides of Mercury and Venus. (Pages 556 and 557.)

h the fraction of the whole disc illuminated.

i the angle between Earth and Sun as seen from the planet.

θ the position-angle of the line of cusps.

L the brilliancy of the disc.

Physical Ephemeris of Mars. (Pages 558 to 561.)

P is the position-angle of the axis of rotation, $A\oplus$, $A\odot$, the planetocentric Right Ascension of the Earth and Sun respectively, reckoned in the plane of the planet's Equator from the vernal Equinox of the planet's Northern Hemisphere.

$D\oplus$, $D\odot$ are the planetocentric declinations of the Earth and Sun.

$\odot 5$ the planetocentric longitude of the Sun in the plane of the planet's orbit.

h the fraction of the whole disc illuminated.

i the angular distance of Earth and Sun as seen from the planet.

q , Q the amount and position-angle of the greatest defect of illumination.

Physical Ephemeris of Jupiter. (Pages 562 to 565.)

The correction for phase is applicable to the central meridian.

Tables of Time Equivalents. (Pages 566 to 569.)

These tables are for converting mean time into sidereal time and *vice versa*.

Day and Fraction of the Year. (Pages 570 and 571.)*Days elapsed of the Julian Period at Mean Noon.* (Page 572.)

The Julian Period is a period of 7980 years, the year A.D. 1 corresponding to the year 4714 of the period, or the year 0 (B.C.1) to the year 4713 of the period. The year 1928 therefore, corresponds to the year 6641 of the Julian Period.

As the year c corresponds to the year 4713 of the period, at the commencement of the year 0, there have elapsed 4712 years, or 1,721,058 days of the period. It is on this basis that the Table has been calculated. The Table gives the number of days of the period elapsed at the commencement of each fourth year of our era, from the year 0 to the year 1996. In the construction of the Table it has been assumed that the Gregorian reformation of the Calendar was introduced in the year 1582.

EXPLANATION.

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Geocentric Co-ordinates. (Page 573.)

This page contains a Table for computing the geocentric latitude and log. radius of a place on the Earth's surface, the geographical latitude of which is known. The Table is adapted to a compression of $\frac{1}{297.0}$.

Observatories. (Pages 574 to 581.)

These pages contain a list of the *Longitudes and Latitudes of the principal Public and Private Observatories*, together with the Reduction of the Geographical to the Geocentric Latitude and the logarithm of the Earth's Radius for sea level for the position of each Observatory, computed with an assumed compression of one part in 297.0.

In the case of three Indian Observatories geodetic positions are given in addition to astronomical positions.

Rising and Setting Tables for the Sun. (Pages 582 to 603.)

Rising and Setting Tables for the Moon. (Pages 604 to 620.)

Standard Times. (Page 621.)

A list of Standard Times in use at various places is given.

ADMIRALTY CHARTS AND SAILING DIRECTIONS.

The Official catalogue of charts published by the Admiralty, issued annually in March, can be obtained free of charge on application to the Admiralty agent for the sale of these Works, J. D. POTTER, 145, Minories, London, E.1.

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